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THE

PROGRESS

OF

THE NATION,

IN ITS VARIOUS

SOCIAL AND ECONOMICAL RELATIONS,

FROM THE

BEGINNING OF THE NINETEENTH CENTURY TO THE PRESENT TIME.

BY

G. R. PORTER, Esq.

Sections I. and II.

POPULATION AND PRODUCTION.

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PROGRESS OF THE NATION.

INTRODUCTION.

It must, at all times, be matter of great interest and utility to ascertain the means by which any community has attained to eminence among nations. To inquire into the progress of circumstances which have given pre-eminence to one's own country would almost seem to be a duty. If this remark may be applied with propriety to any people and to any age, assuredly it may be so applied to this country and to the present generation, by which have been made the greatest advances in civilization that can be found recorded in the annals of mankind.

The task here pointed out has usually been left to be executed by the historian, writing in some age subsequent to that embraced in his inquiries, and it has been urged in support of this practice, that it is only after events have been cleared from the mists in which they are too commonly enveloped by party feelings or personal interests, that a sober and dispassionate estimate can be formed of their importance and tendency. To a certain extent, and within some limitations, this opinion

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is doubtless well-founded, and if the inquiry which it is proposed to pursue in the following pages were connected with party feelings or opinions, or if the results were made to rest for confirmation upon deductions drawn from abstruse or fanciful theories, very little practical utility could be expected to attend the task. Such, however, is not the intention of this work, nor are such the means by which its object is proposed to be accomplished.

To point out the progress of the nation,—not of this or that section of its inhabitants, but the progress of the whole social system in all its various departments, and as affecting all its various interests,—is the object proposed, while the means employed for its accomplishment will, as far as possible, be sought for in well authenticated facts, and the conclusions which these suggest will be supported by principles the truth of which has in general been recognised by common assent.

Many circumstances concur in pointing out the advantage of adopting the commencement of the present century as the point of time whence to begin the inquiries which it is thus proposed to set on foot.

This limitation has been principally influenced by the fact of the legislative union between Great Britain and Ireland having taken effect from the first day of the century, an event by which the different divisions of the United Kingdom were first brought under one uniform system of government, so far at least as to enable writers upon public economy to consider the two islands as one country, each being thenceforth necessarily and immediately affected by the situation and progress of the other.

Another motive, which has had a considerable weight in thus limiting the period of inquiry, will be found in the fact, that the materials which can be brought in aid of a labour of this kind, and which relate to the occurrences of the present century, are vastly superior in amount and value to those that are to be collected from any existing records of earlier date. In support of this assertion, it will be sufficient to mention the decennary enumerations of the population, the earliest of which, as regards Great Britain, was made in 1801. These returns have supplied an amount of information far greater than any before possessed upon a subject the consideration of which enters more or less into every question connected with national affairs.

If the foregoing circumstances had not been sufficient to determine the propriety of thus limiting the proposed inquiries in point of time, the fact that one-half of the period chosen was passed in a state of war, while in the other half this country has enjoyed profound peace, would equally have led to the adoption of that limit as affording an opportunity for making a comparison between the tendency of those opposite conditions of social existence to promote or retard the progress of society in its various relations, whether commercial, financial, political, or moral.

It is proposed then to consider what has been the progress of the nation from the commencement of the nineteenth century, under eight general heads of inquiry. These are—

1. Population.
2. Production—agricultural and manufacturing.
3. Interchange, including internal communication and trade, external communication and commerce, currency, wages, &c.
4. Public revenue and expenditure.
5. Consumption, under which head will be considered the expenditure of individuals for their personal enjoyment, and of societies or combinations of individuals for promoting the general convenience; as well as the quantities and value of commodities consumed.
6. Accumulation—as shown by the increase of national works and buildings, of commercial and agricultural stock, and of articles which minister to the comfort and convenience of individuals.
7. Moral progress, exhibiting the state of the kingdom in regard to crime, its amount, prevention, and punishment; the progress of education, and the advancement of literature and the fine arts.
8. The extent and condition of our Colonies and foreign dependencies.

Towards the illustration of these various points, parliamentary and other official records will be used as far as practicable, and these records fortunately are sufficient in number, extent, and variety, to afford data upon nearly all the subjects which it is proposed to embrace. The extensive inquiries that have been instituted from year to year by the Imperial Parliament, upon almost every branch of the national interests, have made available to our purpose an amount of testimony drawn from the most intelligent and experienced quarters, such as no other country or government in the world has ever brought together. Individual members of the legislature have likewise been accustomed to call upon our public departments for the production of various details, with the view of elucidating all matters that in any way affect either the interests of particular classes of their constituents, or those of the community at large. And recently, the executive government has established a department for the collection and systematic arrangement of information for the use of the legislature and the public, which has been instrumental in bringing to light and classifying a considerable amount of information upon nearly every topic that is connected with the apparent condition of society.

These various channels of information have been diligently explored, and will be freely used, wherever they can be made available to the purpose in view; nor will recourse be had to any less conclusive testimony, except where official records are wanting, or for the purpose of corroborating those records in cases where they may seem to call for confirmation.

SECTION I. POPULATION.

CHAPTER I.

Uncertainty of information previous to present century—Summary of Population in Great Britain, 1801, 1811, 1821, and 1831—In Ireland, 1821 and 1831—Rate of increase—Proportion of Males and Females—Population of France, and rate of its increase—Proportion of Deaths in England—In various countries—Mortality of young persons—Mortality in Manchester—In Middlesex—In England and Wales—Mortality with reference to ages—Baptisms, Burials, and Marriages in England, 1801—1830—Proportions in different Counties.

THE information that existed respecting the numbers of the inhabitants of this country was exceedingly vague and imperfect up to the end of the 18th century. Till then, indeed, all knowledge upon the subject of our population was little more than conjecture. In the course of the 17th century the value of correct information upon this interesting head of inquiry began to be felt and acknowledged, and in the following century attempts were made to deduce the increase, or otherwise, of the population from the difference between the births and burials which had occurred in each decennary period, commencing from the year 1700. It is clear that this plan alone, even if followed with absolute accuracy, could not at any time be relied on for exhibiting the actual numbers of the people, since one chief element of the computation, the number of people existing at the date from which the computation commenced, was unascertained. But it is well known, also, that a considerable portion of the people in England have never been accustomed to avail themselves of the system of voluntary registration of their children. Hence computations from such materials could be considered only as approximations towards the establishment of data upon this leading branch of social economy.

Previous to the census of 1801, there existed no *official* returns of the population of either England or Scotland, and the earliest enumeration in Ireland took place in 1813. The answers obtained under the population acts which have been put in force during the present century, have, however, rescued the question of the amount of our population from the obscurity in which it was previously involved, and have furnished data of the most valuable kind as the ground-work for various political calculations.

The result of the enumeration of the people which was made in 1801 was at first impugned as to its accuracy by several writers; but although it is probable that in this first attempt to perform an arduous operation some errors would be committed, we are warranted, by the result of subsequent enumerations, in believing that the census of 1801 was not far from correct. The presumption, indeed, would be that any errors that might have been made would be errors of omission, whereas the objections that were actually made all went to charge the enumeration with inaccuracy in an opposite direction. The agreement that has been established by subsequent enumerations in the progressive rates of increase of successive decennary periods affords the best evidence of which the subject is capable in favour of the general accuracy of the first account.

In noticing the controversy here alluded to, Mr. Rickman gives the following explanation in the preface to his Abstract of the Answers and Returns made under the Act of 1831, a work of great labour, and of the highest merit.

"Throughout England and Wales the questions were issued to the 'Overseers of the Poor' (an office established in the year 1752, and too well known for explanation to Englishmen), in the administration of which office these overseers are bound to relieve, at the expense of their several parishes or townships, all the poor who can substantiate their claim to such relief. A considerable scarcity had occurred in the year 1795-6, and this was aggravated almost to famine in the year 1800-1; that is to say, the defective harvest of 1800 raised the price of wheat to 110*s.* per quarter, whereas the average price of the preceding ten years had been 54*s.* per quarter. The poor, therefore, applied in augmented numbers to the overseers, and as relief was usually afforded according to the number of children maintainable by each applicant, the overseers could not fail to be informed of the full number of every family, infants included, in March, 1801 (the time when the Enumeration Act of 1800 was carried into effect); and in parishes not unusually large, were almost able to state the population from their personal knowledge—certainly able to detect any attempt at falsehood in answering the inquiry made by themselves, from house to house; while in families above the necessity of applying for relief, the number of children and servants is too well known to be falsified with success, did any conceivable temptation exist for misrepresentation. Add to this, that the overseers acted under the obligation of an oath to make returns according to the best of their knowledge and belief, and that in most cases there are two or more overseers in each parish who must be presumed to concur in wilful falsehood, before the truth of their returns can be fairly questioned. It is almost needless to add, that the expense of relieving the poor in England and Wales, which in the year 1800 approached the sum of four millions sterling, had become six millions in 1811, and exceeded that sum in 1821; and in the year ending March, 1831 (ten weeks before the enumeration took place), the relief of the poor had amounted to 6,800,000*l*., so that the overseers of the poor have had but too much reason to exercise habitual vigilance as to the number of the children ever since the Population Acts became decennial.

"The poor laws of Scotland are not in such active operation as to require the appointment of special officers, but the machinery for the execution of the Population Act has been usually deemed more perfect there than in England, inasmuch as it is committed to the care of the official schoolmaster of each parish, an institution peculiar to Scotland, which has existed in full vigour since the year 1696; and as the office of precentor and clerk of the parochial session for poor relief is often combined with that of schoolmaster, the personal knowledge of the number of children in every family appertains to the schoolmaster in Scotland almost as effectually as to the overseer in England*; and the habit of regularity, together with the official knowledge of writing and arithmetic, implied in the character of schoolmaster, renders the population returns of Scotland quite as authentic, and obviously more methodical, than those obtained from the overseers of the poor in England."

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* Considering the very small number of the families, or rather of the individuals (for a whole family is seldom or never so supported), who receive relief from the parochial session in most of the Scottish parishes, no peculiar opportunities of knowing the numbers of the people can be attributed to the schoolmaster from the circumstance of his filling the office of session-clerk.

The general accuracy of the population returns in Great Britain may thus be said to be placed beyond reasonable doubt, so that calculations founded upon and fairly deduced from those returns may be received with confidence as evidence upon all those branches of inquiry which are capable of being elucidated by them.

The following table exhibits a summary of the numbers of inhabitants in the counties of England, Wales, and Scotland, respectively, with the number of men employed in the army, navy, and commercial marine at each of the four enumerations that have been made during the present century, showing the actual and percentage increase that has occurred in each decennary period.

	1801	1811		1821		1831	
	Number.	Number.	Increase per cent.	Number.	Increase per cent.	Number.	Increase per cent.
England	8,331,434	9,538,827	14.50	11,261,437	18.05	13,091,005	16 24
Wales..........	541,546	611,788	12.97	717,438	17.27	806,182	12.36
Scotland	1,599,068	1,805,688	12.92	2,093,456	15.93	2,365,114	13.
Army, Navy, &c.	470,598	640,500	..	319,300	..	277,017	..
	10,942,646	12,596,803	15.11	14,391,631	14.12	16,539,318	14·91
Females	5,492,354	6,269,650	14.15	7,254,613	15.71	8,375,780	15.45

The statement of the number of the army and navy, and of the actual numbers and the increase of females exclusively, as found at each enumeration, has been given in this table, because it affords a more accurate view of the progressive increase of the population than could be otherwise obtained. It would be manifestly wrong to exclude from the statement the numbers employed in the army and on the sea; but it might lead us into error, if the progressive rate of increase were measured by including, as one of the elements of the computation, a portion of the population so fluctuating as to numbers and situation.

This objection is obviated by estimating the progressive increase upon the numbers of that part of the population which is stationary, and the propriety of this method of proceeding will be rendered obvious if we observe the discrepancy exhibited in the foregoing table between the proportionate number of females in 1811 and the numbers stated in the other three enumerations. In each of these three periods the excess in the number of females over males agrees with the fully established law of population, whereas in 1811 there is a small predominance in the number of males. It is shown by the table, that at the period in question the number of males employed in the army, navy, &c. was far greater than it was at either of the other periods, and this fact will fully account for the apparent departure from the usual proportions between the sexes, a considerable portion of soldiers being drawn from that part of the kingdom—Ireland, which is not included in the foregoing estimate, besides which a considerable, but unascertained, number of seamen employed in our merchant service during 1811 were foreigners.

The returns of the population of Ireland made under the Act of 1813 were so imperfect that it would be improper to found any argument upon them; and the following table has accordingly been constructed with reference to the enumerations of 1821 and 1831 only.

	1821.			1831.				
	Males.	Females.	Total.	Males.	Females	Total.	Actual Increase.	Per Ct. Incr.
Leinster...	859,798	897,694	1,757,492	927,877	981,836	1,909,713	152,221	8.66
Munster...	960,119	975,493	1,935,612	1,093,411	1,133,741	2,227,152	291,540	15.
Ulster.....	968,061	1,030,433	1,993,494	1,113,094	1,173,528	2,286,622	288,128	14.42
Connaught.	553,948	556,281	1,110,229	660,498	683,416	1,343,914	233,685	21.
	3,341,926	3,459,901	6,801,827	3,791,880	3,972,521	7,767,401	965,574	14.19

The result of these two tables shows that the population of Great Britain and Ireland, which in 1821 amounted to 21,193,458, was at the last enumeration in 1831, 24,304,799, showing an actual increase in the numbers of 3,111,341 souls in ten years; the per centage rate of increase during that interval being 14.68, or very nearly one and a half per centum per annum.

It appears, further, that the rate of increase has been greatest in England; that Ireland has followed next; that in Scotland the rate has not equalled that of Ireland; and that in Wales the numerical progress of the population has been less than in any other part of the kingdom. There is, however, but little difference between Scotland and Wales in this respect, and in fact the difference in the rate of increase during the decennary period between 1811 and 1821 was in favour of Wales.

To appreciate fully the condition and progress of the country as indicated by the foregoing tables, it is necessary to carry back the inquiry to the result of the computations made, as already mentioned, from the registers of baptisms and burials during the eighteenth century. For this purpose the following table is given by Mr. Rickman on the authority of Mr. Finlayson, the Actuary to the National Debt Office, who has been engaged for a series of years in a sedulous investigation of the law of mortality, and has in the course of his inquiries subjected the materials thus furnished to every test suggested by the present comparatively advanced state of physical and statistical science.

POPULATION OF ENGLAND AND WALES, INCLUDING THE ARMY, NAVY, AND MERCHANT SERVICE, IN THE MIDDLE OF EACH OF THE YEARS GIVEN.

Years.	Number.	Increase Per Cent.	Years.	Number.	Increase Per Cent.
1700	5,134,516	—	1760	6,479,730	7.28
1710	5,066,337	—	1770	7,227,586	11.54
1720	5,345,351	5.50	1780	7,814,827	8.12
1730	5,687,993	6.41	1790	8,540,738	9.29
1740	5,829,705	2.49	1800	9,187,176	7.56
1750	6,039,684	3.60			

It will be seen, from this statement, how slowly, when compared with later periods, the population increased during the last century. The computation made for the middle of 1710 even exhibits a decrease during the ten preceding years. The country was indeed at war during the greater part of that period, but hostilities were not then conducted upon so extensive a scale as they have since been without causing any important check to be given to the natural increase of the population. Neither was there in the period referred to any considerable rise or fluctuation in the prices of provisions, and in each of the years the exports of wheat were considerably in excess of the imports. The increase of population in the first half of the last century appears to have been 905,368, or $17\frac{5}{8}$ per cent., while in the second half it amounted to 3,147,492, or $52\frac{1}{10}$ per cent.

For the purpose of comparison with the corresponding number of years in the present century, it may be stated that the increase during thirty years, from 1770 to 1800, is computed to have amounted to 1,959,590, or $27\frac{1}{10}$ per cent.; while the actual increase in England and Wales in the same space of time, between 1801 and 1831, as found by enumeration, reached to 5,024,207 souls, or $56\frac{3}{5}$ per cent.

The following statement shows the total number of persons, distinguishing males from females, who were living in England, Wales, Scotland, Ireland, and the British islands of Guernsey, &c., at the enumeration of 1831.

	Males.	Females.	Total No. of Persons.	Males 20 Yrs. and upwards.
England	6,376,627	6,714,378	13,091,005	3,199,984
Wales	394,563	411,619	806,182	194,706
Scotland	1,114,816	1,250,298	2,365,114	549,821
Army, Navy, &c.	277,017	. . .	277,017	. . .
Total of Great Britain	8,163,023	8,376,295	16,539,318	3,944,511
IRELAND.				
Leinster	927,877	981,836	1,909,713	465,953
Munster	1,093,411	1,133,741	2,227,152	542,200
Ulster	1,113,094	1,173,528	2,286,622	540,479
Connaught	660,498	683,416	1,343,914	319,133
Total of Ireland	3,794,880	3,972,521	7,767,401	1,867,765
Total of Great Britain and Ireland.	11,957,903	12,348.816	24,306,719	5.812,276
Island of Guernsey, &c.	11,983	14,145	26,128	6,236
Jersey	17,006	19,576	36,582	8,747
Man	19,560	21,440	41,000	9,630
Total of British Islands	48,549	55,161	103,710	24,613
Total of United Kingdom.	12,006,452	12,403,977	24,410,429	5,836,889

It appears from the foregoing table, that the proportion between the sexes differs in the different parts of the kingdom:

	Males.	Females.	Males of 20 yrs.
Thus, in England, the proportion is,	48.71	51.29	24.44
,, Wales	48.94	51.06	24.15
,, Scotland	47.14	52.86	23.24
,, G. Britain (includ. army, &c.)	49.36	50.64	25.52

	Males.	Females.	Males of 20 yrs.
In Ireland, the proportion is	48.85	51.15	24.04
„ G. Britain and Ireland	49.20	50.80	23.91
„ Guernsey	45.86	54.14	23.87
„ Jersey	46.49	53.51	23.91
„ Isle of Man	47.71	52·29	23.48
„ British Islands	46.81	53.19	23.73
„ United Kingdom	49.18	50.82	23.91

The proportion between the two sexes in the whole of France at the last census was 48.94 males to 51.06 females: showing a greater disparity than exists in the United Kingdom; while in Spain, according to the census of 1803, the latest to which we have access, in which the numbers of the different sexes are distinguished—the difference was exceedingly minute, scarcely more, indeed, than 1 in 100, the proportion of males being 49.72 and of females 50.28. In the United States of America, the numbers of free white persons, at the enumeration of 1820, were, of males 3,995,053, and of females 3,866,657, showing precisely the reverse of what appear to be the relative numbers in this country, the proportions being 50.82 males and 49.18 females.

The census taken for the United Kingdom, in 1821, gives 10,159,644 as the number of males, and 10,714,514 as the number of females then living, showing the proportion between the two sexes to be 48.67 males to 51.33 females. At that period (1821) the ages were given in classes, as far as related to the inhabitants of Great Britain, but not with completeness, the returns being in fact deficient to the extent of 1,584,954 persons whose ages are not stated, 743,126 of whom were males and 841,828 females. If allowance be made for this deficiency, on the supposition that it applies in equal proportion to every class of ages, it will then appear that the males, 20 years of age and upwards, who were living in Great Britain in 1821, bore the proportion of 239 to 1000 of the whole population, which agrees entirely with the proportion established for the whole kingdom in 1831, as already shown.

The mode at present employed for ascertaining the progress of the population in France is the same as that by which the population of England and Wales has been calculated for the eighteenth century; and the law of that country respecting the registrations of births and burials is so strictly enforced that there is good reason for relying upon the general accuracy of the computations derived from those documents. It would not be satisfactory to draw any comparison between the population returns of France and those of our own country during the last 30 years, owing to the great changes made during a part of that time in the extent of the French territory; but we may obtain satisfactory means of comparison by carrying back the inquiry 10 years further, to a time before additions were made to the territory of the ancient monarchy.

In 1791 a committee of the Constituent Assembly, appointed for the purpose of inquiring concerning the population of the kingdom, reported that it amounted to	26,363,000
In 1817, when France had again been reduced by the treaty of Paris to its ancient limits, the population returns gave a total of	29,217,465
In 1825 the numbers were	30,451,187
And in 1831, when the last computation was made, France contained a population of	32,560,934

The increase, according to these statements, has amounted

	Souls.	per cent.
In 40 yrs., betw. 1791 and 1831, to	6,197,934, or	23½
26 yrs., betw. 1791 and 1817, to	2,854,465, or	10⅘
8 yrs., betw. 1817 and 1825, to	1,233,722, or	4¼
6 yrs., betw. 1825 and 1831, to	2,109,747, or	7

It will be seen that these rates of increase are widely different from those which have marked the progress of population in this kingdom. In the 40 years previous to 1831 the increase of numbers in England and Wales was equal to 62¾ per cent., showing an advantage in favour of England in the proportion of eight to three. If the comparison be made with reference to the period between 1817 and 1831, it will be found that, while the increase in the French population was 11.44 per cent. in 14 years, or after the rate of about eight-tenths per cent. (.82) annually, the increase in the United Kingdom was after the rate of about 1⅗ per cent. (1.58) annually. According to these rates of increase, the population of the United Kingdom would double itself in about 48 years, while, at the rate experienced in France, a similar effect would not be produced in less than 88 years.

In both countries the increase here stated has been the result, not of an increased proportion of births, for in fact the births, if calculated with relation to the numbers of the people, have diminished, but to a diminished proportion of deaths. In France the births, which in 1817 were in the proportion of 1 in 31, were, in 1834, in the proportion of 1 in 33⅔; while the deaths, which in 1817 were 1 in 39⅓, were diminished in 1834 to 1 in 41. In England the proportions of births and deaths, at different periods since the beginning of the century, have been as follows:—

For ten years preceding 1811, Births, one in 31⅓
Deaths, one „ 53¾
„ 1821, Births, one „ 31¾
Deaths, one „ 60½
„ 1831, Births, one „ 34¼
Deaths, one „ 58½

The estimated proportions of deaths in the course of the preceding century were,

1700, one in 39⅘
1710, one „ 36⅒
1720, one „ 35½
1730, one „ 31⅒
1740, one „ 35⅓
1750, one „ 40⅔
1760, one „ 41⅘
1770, one in 41⅕
1780, one „ 41½
1785, one „ 41¾
1790, one „ 45⅕
1795, one „ 47⅕
1800, one „ 47¾

Showing in this respect a continually diminishing mortality. This effect, so strongly indicative of amendment in the condition of the people, must be attributed to the concurrence of various causes. Among these may be mentioned, the less crowded state of our dwellings; the command of better kinds of food and medical assistance; the superiority and cheapness of clothing; and probably also, more temperate habits and greater personal cleanliness. One influential cause of the diminished rate of mortality will be found in the introduction of vaccination, which has had so powerful an effect in diminishing the rate of mortality among children: besides which, the extensive surface drainage which has been going forward in those parts of the country which, owing to the presence of stagnant waters, were once productive of intermittent fevers, has added to the general healthiness of the country.

The superiority of this country over others, in respect of the comparative rates of mortality, may be seen in the following statement of the annual proportions of deaths to the whole population in the different countries named, which was communicated to Mr. Rickman by Sir Francis D'Ivernois, a gentleman who has devoted his attention for many years to the elucidation of the various phenomena relating to the law of mortality.

England and Wales,	one	death in	59
Sweden and Denmark,	one	,,	48
Holland and Belgium,	one	,,	43
France ,, ,,	one	,,	40
United States of America,	one	,,	37
Prussia ,, ,,	one	,,	36
Wurtemburg ,,	one	,,	33

In the following statement, extracted from a table inserted by Mr. Senior in his excellent preface to the "Foreign Communications" sent to the Poor Law Commissioners, are given, on competent authority, generally official, various particulars relative to the population of countries in most parts of the world.

PLACES.	Proportion of Annual Deaths to the whole Population.	Proportion of Annual Births to the whole Population.	Proportion of Annual Marriages to the whole Population.	Average Number of Children to a Marriage.	Proportion of Legitimate to Illegitimate Births.	Proportion of Children that die before they attain their		
						1st Year.	10th Year.	19th Year.
AMERICA.								
Massachusets...	1 in 40	. . .	. . . .	5				
Boston........	1 in $41\frac{7}{11}$	. . .	. . . .	. .	. . .	1 in 5 nearly.		
New York (City)	1 in 30	. . .	. . . .	5	. . .	27 in 100	49 in 100	53 in 100
Carthagena de Columbia...	6 to 8 in 100	8 to 10 in 100	. . . .	4 to 5	5 to 6	One-half.		
Hayti.........	Births and Deaths equal.		. . . .	3 to 4	1 to 1000	Large proportion.		. .
Maranham.....	1 in 25	1 in 20	Small.	5	Proportion of Illegitimates great.			
EUROPE.								
Norway.......	1 in 54	1 in 28	1 in 119	. .	14 to 1	Under 5 yrs. 1 in 3	1 in $2\frac{4}{7}$	1 in $2\frac{3}{5}$
Sweden........	1 in $41\frac{1}{2}$	1 in 29	1 in $117\frac{1}{2}$	$3\frac{3}{5}$ to $4\frac{1}{5}$	16 to 1	1 in $6\frac{11}{15}$	$\frac{13}{29}$ die under 16 yrs.	
Russia........	1 in $25\frac{92}{100}$	1 in $23\frac{36}{100}$	1 in 132	3 to 4	. . .	. . .	One-half.	. .
Denmark......	1 in 40	1 in 34	1 in 123	$3\frac{27}{40}$	$9\frac{2}{3}$ to 1	. . .	1 in $3\frac{58}{100}$	. .
Mecklenburgh..	1 in $46\frac{1}{2}$	1 in 27	1 in 124	4	9 to 1	Before 14th year one fourth.		
Saxony.......	1 in $34\frac{1}{2}$	1 in $24\frac{4}{5}$	1 in 131	. .	7 to 1	Before 14th year one-half.		
Wurtemburg...	1 in $31\frac{1}{3}$	1 in $27\frac{1}{10}$	1 in 147	$4\frac{8}{10}$	$7\frac{1}{10}$ to 1	$34\frac{2}{3}$ in 100	From 1 to 7 1 in 10	From 7 to 14 1 in 45
North Holland..	1 in $30\frac{6}{10}$	1 in $30\frac{7}{10}$	1 in $122\frac{8}{10}$	$5\frac{1}{10}$	15 to 1	1 in 7	1 in $4\frac{2}{5}$	1 in $2\frac{2}{3}$
Belgium.......	1 in 43	1 in 30	1 in 144	$4\frac{72}{100}$	21 to 1	1 in 5	1 in 4	1 in $2\frac{1}{5}$
France.........	1 in $39\frac{6}{10}$	1 in $32\frac{4}{10}$	1 in $131\frac{6}{10}$	$4\frac{7}{100}$	13 to 1			
Azores........	1 in 48	1 in 19	. . .	3 to 4	7 to 1	Nearly half.		
Genoa........	1 in $28\frac{4}{7}$	1 in 20	1 in 166	. .	. . .	1 in 4	45 in 100	48 in 100

The proportionate number of children born in any country cannot be taken as a test of the condition of the people. It is well known that in climates where the waste of human life is excessive from the combined causes of disease and poverty affecting the mass of the inhabitants, the number of births is proportionately greater than is experienced in communities more favourably circumstanced. Frequently, and indeed almost always in old settled countries, the proportionate number of births decreases with the advance of civilization, and the more general diffusion of the conveniences and luxuries of life. In fact, the population does not so much increase because many are born, as because few die.

The bills of mortality for various parishes of the cities of London and Westminster, and some out-parishes in Middlesex and Surrey, have been kept with a great degree of accuracy for a long series of years, and afford the means for testing this view of the subject by giving in certain classes the ages at which persons have died in every year. An examination of these annual bills will show not only that the total number of deaths has decreased in a most remarkable degree, relatively to the amount of population, but also that the proportion of persons under 20 years of age in the whole number buried has been progressively diminishing.

In the 10 years from 1751 to 1760, the total number of burials within the bills of mortality was 205,279, of whom 106,264, or $51\frac{3}{4}$ per cent. were under 20 years of age.

					Under 20 yrs.
From	1761	to 1770,	234,407	of whom	118,963 or $50\frac{3}{4}$ per cent.
,,	1771	,, 1780,	214,605	,,	112,133 or $52\frac{1}{4}$
,,	1781	,, 1790,	192,690	,,	96,126 or $49\frac{7}{8}$
,,	1791	,, 1800,	196,801	,,	98,104 or $49\frac{7}{8}$
,,	1801	,, 1810,	188,842	,,	90,397 or $47\frac{7}{8}$

			Under 20 yrs.
From 1811 to 1820,	190,568,	of whom	85,954 or 45 1/10 per cent.
„ 1821 „ 1830,	209,094	„	96,336 or 46¼
and in 3 years, from 1831 to 1833,	80,520	„	34,109 or 42⅓

It is not possible to state the numbers of persons who, at these several periods, have inhabited that part of the metropolis which is included within the bills of mortality; no precise calculation can therefore be given as to the proportion of deaths occurring at different intervals. It is known, that the increase of inhabitants since the middle of the last century has been exceedingly great; while on the other hand there has been a decrease in the number of deaths, not relatively to the amount of population, but positively.

It will appear from inspection of the above table, that the improvement in this respect which has been progressive since the middle of the last century, has become much more rapid since the beginning of the present. The difference observable between the proportionate number of deaths under twenty, in the decade commencing with 1751, and in that ending with 1800, two periods the extremes of which are separated from each other by a space of fifty years, shows an improvement of only 1⅞ per cent.; while the difference experienced in the thirty-three years that occurred between 1800 and 1833, being just two-thirds of the former period, shows an improvement of 7½ per cent., the greater proportion of which has occurred within the last twenty-five years. If this rate of progression should be maintained until 1850, which there appears no reason for doubting will be the case, the proportionate mortality of the young will be diminished in comparison with what it was in the corresponding period of the last century, in the ratio of 382 to 518. It must be borne in mind, that the improvement here spoken of is calculated upon the actual number of deaths among the population; and that to form a just estimate of the probability of life among the young at the present time as compared with former periods, the number of deaths occurring under twenty should be calculated not upon the number who have died, but upon the number of the entire population. The estimate given above merely compares one improvement with another, or rather shows which of the classes, the young or the old, has participated most largely in the improvement which has taken place. In 1780 the annual mortality of England and Wales was 1 in 40; in 1801, it was 1 in 48; and in 1830 it had decreased to 1 in 58. Supposing these proportions, which have been established for the whole of England and Wales, to be applicable to London, (where the total annual mortality at present is 1 in 46,) we shall find the progressive decrease in the mortality of persons under 20 to have been as follows:—

In 1780 the deaths under 20 years of age were 1 in 76½
„ 1801 „ „ „ 1 in 96¼
„ 1830 „ „ „ 1 in 124¾
„ 1833 „ „ „ 1 in 137

being not much more than one-half of the proportion who died under 20 half a century ago.

In noticing the subject of the mortality of children, Sir Francis D'Ivernois observes,* "If the different States of Europe were to keep and publish every year an exact account of their population, carefully stating, in a separate column, the precise ages at which children have died, that separate column would exhibit the relative merits of the governments, as indicated by the comparative happiness of their subjects. A simple statement of figures would then be more conclusive upon this point than any other arguments that could be adduced." It is to be remembered, however, first, that a government cannot, with reason, be held to be the source of *all* the circumstances, favourable and unfavourable, which affect the happiness of a country; and secondly, that the proposed comparison would at best only furnish an indication as to the conduct of the actual government of any country, not as to the permanent excellence of the constitution.

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* Tableau des Pertes, &c. ch. ii., p. 16.

It cannot be necessary to multiply evidence in order to prove the fact that the number of births has decreased, and is still decreasing in proportion to the amount of population in this kingdom. The abstracts of parish register returns made with so much care and ability by Mr. Rickman may be taken as conclusive proofs of the fact.

It was for a long time the practice with political calculators to consider a great proportion of births among the people as being one of the surest signs of the country being in a flourishing condition. Under certain circumstances there can be no doubt that an increase of numbers thus brought about is a favourable symptom. In thinly-peopled but fertile countries, and in newly-settled states, this will generally be the case; but it appears to be an error to consider a large proportion of births to be necessarily a symptom of improvement in well-peopled territories; and it might with more truth be asserted that the contrary condition of a small proportion of births is more frequently indicative of prosperity in the mass of the people. In Ireland population increases almost as fast as in England, and mortality diminishes in its rate, yet the people improve but little in their condition. Circumstances which have increased the rate of mortality have always tended to increase likewise the number of births, an effect which is produced by the rise in the wages of labour following necessarily from a diminution in the number of labourers, the class which for the most part furnishes the increased proportion of deaths.

On the other hand, the increase of population which results from a diminishing proportion of deaths is an unerring sign of advancing prosperity in the people.

The following table was given in evidence before the Committee of the House of Commons which sat in May, 1830, to inquire concerning the returns under the Population Act.

Year.	Population deduced from Baptisms.	Burials in the year 1780.	Rates of Registered Burials.
1780	7,953,000	198,300	1 in 40.10
		Average Burials 1780—1800.	
1780	7,953,000	192,000	1 in 41.42
1785	8,016,000	192,000	1 in 41.75
1790	8,675,000	192,000	1 in 45.18
1795	9,055,000	192,000	1 in 47.16
	Enumerated population.		
1800	9,168,000	192,000	1 in 47.75
		Average of ten preceding years.	
1810	10,488,000	195,000	1 in 53.78
1820	12,190,000	201,000	1 in 60.65
		Registered Burials in 1820.	
1820	12,190,000	208,300	1 in 58.50

The small rate of improvement observable in the latter end of the last century is no doubt the effect in a great degree of the deficient harvests in 1795 and 1800.

It has been supposed that the general healthiness and duration of life among the people must be diminished by their being brought together in masses, and in particular it has been objected to the factory system of this country, that by this means it has added to the sum of human misery. To combat this opinion, it will be sufficient at present to bring forward the case of Manchester, where the increase of population has been great beyond all precedent, owing to the growth of its manufacturing industry.

The population of the townships of Manchester and Salford, at each of the four decennary enumerations, was found to be as follows :—

1801	94,876			
1811	115,874	Increase	22	per cent.
1821 .. .	161,635	„	39½	„
1831	237,832	„	47	„

The increase during the whole period of 30 years being 142,956, or 150 per cent. upon the population of 1801. Much of this increase has no doubt arisen from the continual immigration to a town of such growing manufacturing prosperity. But much, on the other hand, is to be ascribed to the increase of births.

The mortality of these townships in the middle of the last century was 1 in 25; in 1770, 1 in 28. In 1811, when the population had already very greatly increased, the rate of mortality had sunk considerably, and in the ten years ending with 1830 was not more than 1 in 49, a low rate, if we take into the account the fact that, in manufacturing towns, children are brought together in a much greater proportion than the average of the kingdom.

The decrease in the proportion of deaths among children in London has already been mentioned. It is not easy to determine satisfactorily the number of deaths of aged persons, in consequence of the prevailing custom of persons whose worldly circumstances allow of their doing so, to retire in the evening of their days from the crowded city to the country. We may mention, however, that for several years past the bills of mortality have exhibited a continually and steadily increasing number of persons whose deaths can be ascribed to no particular disease, and who are stated to have vanished from the scene of life in consequence of "old age and debility."

The annual mortality of the county of Middlesex, the largest proportion of whose population belongs to the metropolis, was, in 1801, 1 in 35, having been computed at the beginning of the preceding century at 1 in 25; whereas in 1830 the rate of mortality had diminished to 1 in 45, a rate much more favourable than that for the whole of France, and indeed of almost any other country in Europe, and materially less than the known rate of mortality of every populous city out of the United Kingdom. The greater mortality of cities, as compared with rural districts, has been attributed to "the constant importations from the country of individuals who have attained to maturity, but having been previously habituated to frequent exercise in a pure atmosphere, and to a simple regular diet, are gradually sacrificed to confined air, sedentary habits, or a capricious and over-stimulating food."*

The following abstract of the detailed statement of the ages of 3,938,496 persons buried in England and Wales during the 18 years from 1813 to 1830, is taken from Mr. Rickman's Tables of 1831.

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* Elements of Medical Statistics by Dr. F. Bisset Hawkins, p. 74.

Ages.	Males.			Females.			Both Sexes.		
	Born and remaining alive at each period.	Died.	Died in each period out of each 1000 remaining.	Born and remaining alive at each period.	Died.	Died in each period out of each 1000 remaining.	Born and remaining alive at each period.	Died	Died in each period out of each 1000 remaining.
Under 5 years .	1,996,195	736,039	369	1,942,301	622,903	321	3,938,496	1,358,942	345
5—9 . . .	1,260,156	87,263	69	1,319,398	79,732	61	2,579,554	166,995	65
10—14 . .	1,172,893	52,324	45	1,239,666	52,155	42	2,412,559	104,479	43
15—19 . .	1,120,569	63,405	57	1,187,511	71,535	60	2,308,080	133,940	59
20—29 . .	1,057,164	144,586	137	1,115,976	163,140	146	2,173,140	307,726	142
30—39 . .	912,578	123,996	136	952,836	140,848	148	1,865,414	264,844	142
40—49 . .	788,582	129,675	165	811,988	130,139	160	1,600,570	259,814	162
50—59 . .	659,907	142,843	217	681,849	132,918	195	1,340,756	275,761	206
60—69 . .	516,064	182,007	352	548,931	179,251	327	1,064,995	361,258	339
70—79 . .	334,057	202,208	605	369,680	211,028	571	703,737	413,236	587
80—89 . .	131,849	116,726	886	158,652	136,085	858	290,501	252,811	870
90—99 . .	15,123	14,486	960	22,567	21,304	948	37,690	35,790	948
100 and upwards	637	637	1000	1,263	1,263	1000	1,900	1,900	1000

The following table, calculated upon the actual number of registered burials, shows the per centage proportion of mortality that has occurred in the population of each decennary period of life, in the year 1813, in the average of seven years from 1818 to 1824, and in the year 1830.

Ages at which the Deaths have occurred.	1813.		1818-1824—(average)		1830.	
	Number of Burials.	Per Cent. Propor.	Number of Burials.	Per Cent. Propor.	Number of Burials.	Per Cent. Propor.
From Birth to 10 Years old.	73,056	39.75	84,696	39.60	91,533	38.56
,, 11 ,, 20 ,,	10,789	5.87	13,535	6.33	15,730	6.63
,, 21 ,, 30 ,,	13,722	7.47	16,459	7.69	19,125	8.06
,, 31 ,, 40 ,,	12,439	6.77	14,319	6.69	16,084	6.77
,, 41 ,, 50 ,,	11,965	6.51	14,120	6.61	15,225	6.42
,, 51 ,, 60 ,,	13,720	7.46	15,268	7.14	17,459	7.35
,, 61 ,, 70 ,,	17,925	9.75	20,190	9.44	22,018	9.27
,, 71 ,, 80 ,,	19,011	10.34	21,917	10.25	25,034	10.55
,, 81 ,, 90 ,,	9,865	5.37	11,921	5.57	13,614	5.74
,, 91 ,, 100 ,,	1,231	0.67	1,389	0.65	1,520	0.64
Above 100	66	0.04	62	0.03	58	0.02

It has been noticed by several writers, that in the tables from which the foregoing abstract has been compiled, a much larger proportion of deaths is assigned to each even decennary year than appears in the year preceding or succeeding, and attempts have been made to account for this circumstance, by supposing that some particular bodily change may occur in human beings at those periods of life. It does not appear very likely that this should be the fact, and the circumstance is in all probability owing to the assigning of those even periods by survivors in the absence of a more precise acquaintance with the ages of persons deceased.

The two tables now to be given exhibit the movement of the population during the progress of the present century. The first of these tables records the number of registered baptisms, burials, and marriages, in England and Wales in the course of each year from 1801 to 1830, and the second gives their annual proportion in each of the counties of England, calculated upon the amount of population therein during each of the quinquennial periods preceding the enumerations of 1801, 1811, 1821, and 1831.

Baptisms, Burials, and Marriages, in England and Wales.

Year.	Baptisms.			Burials.			Marriages.
	Males.	Females.	Total.	Males.	Females.	Total.	
1801	120,521	116,508	237,029	101,352	103,082	204,434	67,288
1802	139,889	133,948	273,837	99,504	100,385	199,889	90,396
1803	150,220	143,888	294,108	102,459	101,269	203,728	94,379
1804	150,583	144,009	294,592	91,538	89,639	181,177	85.738
1805	149,333	142,868	292,201	91,086	90,154	181,240	79,586
1806	147,376	144,553	291,929	92,289	91,163	183,452	80,754
1807	153,787	146,507	300,294	97,996	97,855	195.851	83,923
1808	151,565	144,509	296,074	102,614	98,149	200,763	82,248
1809	152,812	147,177	299,989	97,894	93,577	191,471	83,369
1810	152,591	146,262	298,853	104,907	103,277	208,184	84,470
1811	155,671	149,186	304,857	94,971	93,572	188,543	86,389
1812	153,949	148,005	301,934	95,957	94,445	190,402	82,066
1813	160,685	153,747	314.432	93,726	92.751	186,477	83,860
1814	163,282	155,524	318,806	103,525	102,878	206,403	92,804
1815	176,233	168,698	344,931	99,442	97,966	197,408	99,944
1816	168,801	161,398	330,199	103,954	102,005	205,959	91.946
1817	169,337	162,246	331,583	101,040	98,229	199,269	88,234
1818	169,181	162,203	331,384	107,724	105,900	213,624	92,779
1819	171,107	162,154	333,261	106,749	106.815	213,564	95,571
1820	176,311	167,349	343,660	104,329	104,020	208,349	96,833
1821	181,811	173,496	355,307	107,482	104,870	212,352	100.568
1822	190,508	182,063	372,571	111,299	109,116	220,415	98,878
1823	189,144	180,616	369,760	119,649	117,737	237,386	101.918
1824	189.401	182.043	371,444	124,027	120,047	244,074	104,723
1825	192,003	183,050	375,053	129,727	125,291	255,018	110,428
1826	194,527	185,886	380,413	136,100	132,061	268,161	104,941
1827	191,428	182,758	374,186	128,991	122,880	251,871	107,130
1828	200,333	192,121	392,454	130,015	125,318	255,333	111,174
1829	194,080	186,156	380,245	134,525	129,705	264,230	104.316
1830	194,200	187,860	382,060	129,290	124,777	254,027	107,719

The following is a Table of the Annual Proportion of Baptisms, Burials, and Marriages, to the Population of England; calculated upon an average of the Totals of such Baptisms, Burials, and Marriages, in the five years preceding the several enumerations of 1801, 1811, 1821, and 1831; and distinguishing the several Counties.

COUNTIES.	1796-1800.			1806-1810.			1816-1820.			1826-1830.		
	Bap.	Bur.	Mar.	Bap.	Bur.	Mar.	Bap.	Bur.	Mar.	Bap.	Bur.	Mar.
Bedford .... 1 in	35	51	114	32	48	131	33	57	123	35	54	129
Berks	34	51	148	33	53	144	33	54	140	32	52	149
Bucks	37	50	129	32	49	129	33	53	139	34	52	140
Cambridge......	33	45	118	30	30	131	30	55	117	31	45	123
Chester	39	51	130	32	49	132	34	52	127	37	52	139
Cornwall	33	58	120	31	62	142	32	69	146	33	64	147
Cumberland ...	38	54	145	34	52	132	32	54	151	32	54	163
Derby	35	52	138	32	58	138	34	59	146	35	54	135
Devon	36	49	109	32	50	113	32	59	132	35	58	132
Dorset	41	62	142	34	56	139	34	63	144	35	58	140
Durham	38	43	116	32	49	131	32	53	134	32	52	138
Essex	35	44	126	32	45	130	34	58	146	35	52	154
Gloucester......	37	55	127	35	61	120	35	60	111	35	61	117
Hereford	40	65	183	35	60	144	36	60	170	37	57	152
Hertford	38	54	161	33	57	168	33	53	171	36	56	175
Huntingdon ...	33	46	104	32	49	134	33	61	127	34	46	131
Kent............	30	41	116	28	38	115	30	50	130	33	49	143
Lancaster	34	47	114	28	49	115	31	51	116	34	46	115
Leicester	35	49	130	36	58	134	34	56	126	36	53	127
Lincoln	32	50	117	30	49	125	31	59	134	32	51	134
Middlesex	39	37	95	39	36	94	36	45	101	31	41	103
Monmouth	56	72	169	45	64	146	46	66	148	45	69	131
Norfolk	32	47	126	31	50	135	31	59	129	32	52	139
Northampton ..	42	51	130	35	53	132	34	55	129	35	50	135
Northumberland	47	57	139	35	54	160	37	57	139	36	52	134
Nottingham ...	32	51	116	32	52	119	32	54	124	31	51	122
Oxford	35	53	139	33	56	141	33	57	148	32	53	141
Rutland	33	50	131	33	54	161	34	62	143	33	52	137
Salop	34	54	142	34	59	142	34	54	148	35	53	140
Somerset	39	55	139	34	53	128	35	61	140	35	58	147
Southampton ..	34	46	104	30	46	102	31	61	128	34	56	131
Stafford	34	49	124	31	52	118	31	51	123	32	51	126
Suffolk	34	56	129	31	54	132	33	65	134	35	59	137
Surrey..........	37	42	134	35	44	129	38	49	139	38	49	129
Sussex	31	55	126	28	52	128	32	68	142	33	58	142
Warwick	35	52	116	34	43	119	35	48	118	34	58	120
Westmoreland.	35	50	142	31	53	137	33	52	149	32	56	152
Wilts...........	41	60	142	34	57	138	35	63	135	35	57	148
Worcester	34	46	137	31	51	129	33	53	140	31	51	127
York. E. Riding	39	55	129	29	48	108	33	54	122	35	51	118
— City&Ainsty										36	52	113
— N. Riding ..	36	53	142	30	51	124	34	61	147	33	55	144
— W. Riding .	35	49	124	31	51	123	33	57	124	35	51	131
Summary of the Counties of England 1 in	36	48	123	32	49	121	33	55	127	34	51	128

It has been usual with writers on political economy to point to the diminished proportion of marriages and births as evidence of increasing prudence on the part of the people, who, as they become more intelligent, are supposed to be less willing to undertake the charge of a family until they shall, in some measure, have secured the means of supporting one. It may, however, be doubted whether, under ordinary circumstances, this kind and degree of prudence has ever been extensively practised in any civilized community. It is true that, in years of scarcity, some temporary check may be put to the contracting of marriages; but if we consider how small the proportion of individuals in a community can be, who, even in the most prosperous times, have any certain assurance that their means of supporting a family will be continued to them in future years, we must perceive that this "preventive check" can never have any very extensive operation.

The real cause of the proportionate decrease in the numbers of marriages and births must probably be sought in the increased duration of life, which occasions the continuance in the world of a larger number of persons of those ages during which people are no longer liable to incur the responsibilities of parents. If, instead of calculating the proportionate numbers of marriages and births from the entire population of this country, the estimate were made with reference to that part of it which is still in the vigour of life, it appears probable that not any diminution whatever would be found in those proportionate numbers.

CHAPTER II.

Neglect of the subject of Medical Statistics—Means of supplying the requisite information—Introduction of Vaccination—Mortality from Small-pox at different periods in the Metropolis—Mortality in St. Bartholomew's Hospital—London Hospital—St. George's Hospital—Manchester Infirmary—Liverpool Infirmary—Lock Hospital — Christ's Hospital — Proportion of Cures and Deaths in St. Luke's Hospital—Bethlem Hospital.

IT is greatly to be regretted that, up to the present period, the subject of the medical statistics of this country has been so little attended to—it might almost be said, so wholly neglected. In the volume published in 1829 by Dr. Bisset Hawkins, under the title of "Elements of Medical Statistics," many scattered facts bearing upon the subject have been collected together with industry and ability, but the extent of the materials available for the writer's purpose was so limited that the work cannot be considered as at all affording any satisfactory exposition of the subject. The principal value of Dr. Hawkins's labours will perhaps be found to consist in his having awakened attention to the subject, so that persons who possess the opportunity may undertake the registration of facts in a manner which will enable them at some future time to make a valuable addition to the sum of our economical knowledge.

The hospitals of this country, so numerous and so liberally supported, are among the most honourable of our national monuments. The feelings of benevolence which have prompted their erection and endowment have been shared in an eminent degree by the members of the medical profession, who have always been ready to devote their time and skill to the relief of the miseries of such of their fellow-creatures as are found within their walls. These institutions are also highly esteemed as schools for surgical and medical practice; so that whenever any medical office attached to an hospital is vacant, it is usually made an object of honourable contest who shall fulfil its gratuitous duties; and by this means it most commonly happens that hospital physicians and surgeons in this country are among the most skilful practitioners of the age.

For this reason, the records of our public hospitals and infirmaries, if kept with regularity and upon any uniform plan, could not fail to afford a fair and perfect view of the progress of the curative science in this country; and it is to be hoped, that being made aware by means of Dr. Hawkins's volume, as well of the value of such information as of its present scanty amount, those who have the direction of these establishments will be careful to supply the deficiency by every means in their power. With very few exceptions, hospitals in this country derive their origin and draw their support from private sources, for which reason they are under no sort of control on the part of the Government; and although there is no reason to doubt the readiness of those by whom their affairs are conducted to communicate freely whatever information may come within their reach, it is evident that there is no authority to direct any record of facts according to a prescribed form, by which means alone the full value can be given to information of that nature.

The disadvantage of our present state of ignorance upon this subject has been well stated by Dr. Hawkins in the following words:—" No one can be more deeply aware than myself of the difficulties and even dangers of the subject; of the dubious authenticity and frequent fluctuation of the necessary details; and of the precarious nature of any general principles attempted to be framed out of facts, which have, for the most part, endured the test of only a few years, and which have only recently become the object of inquiry or scrutiny. But an extensive assemblage and classification of such facts possess an historical and local value, whatsoever may be the fate of the reasonings deduced from them. Independently of the light which this study throws upon medical science, it affords the most valuable illustrations of the history, manners, and customs of mankind, and a just criterion of the progressive or retrograde movements of society."

The foregoing remarks appear necessary, in order to account for the unsatisfactory amount of information which it is possible to bring together in the present work upon this interesting branch of inquiry. Small as that amount in reality is, it is yet greater in quantity, and more precise in its details, than is to be found in any work hitherto published—a circumstance which is owing to the ready and kind assistance that has been afforded by the governors and medical officers of some of the hospitals in the metropolis.

The introduction of vaccination as a substitute for variolous inoculation is an improvement which properly belongs to the present century. The discovery, that, by thus inducing a very mild complaint, the means of escaping a most formidable disease would be secured, if not to absolute certainty, yet to such a degree as to remove from the mind all dread of its visitation, was made in 1798, but although the attention of the medical world was immediately excited in the most intense degree to the subject, it required several years of experience before the value of the discovery was fully recognised by medical practitioners, and before the public were sufficiently weaned from their previous prejudices, to avail themselves to any extent of the blessing. It was not until 1808, ten years after the first introduction of the vaccine practice, that the medical officers of the Small Pox Hospital in London ceased to inoculate out-patients for the small-pox; and so slowly did the perfect conviction of the value of the substitute make its way in their minds, that it was not until June, 1822, almost a quarter of a century after Dr. Jenner's discovery, that the practice of inoculating was discontinued within the walls of that hospital.

Those persons who are old enough to carry back their recollection to years before this discovery was made, or who have since visited densely peopled countries in which small-pox has prevailed, will readily admit the happy effects of vaccination. Of all the diseases to which mankind is subjected, at least in temperate regions, there is not one which, in modern times, has proved so desolating as small-pox. A reference to the following statement, compiled from the weekly bills of mortality during the last 130 years, embracing a period both before and since the substitution of cow-pox, will exhibit at one view the extent both of the misery which the old disease caused, and of the relief which society is experiencing from the adoption of its milder substitute:—

Statement of the total average mortality, and the average mortality arising from Small-pox, within the Weekly Bills of Mortality at different periods since the commencement of the eighteenth century; showing the proportion of deaths from Small-pox at each period, and the numbers of the population comprehended within the said district at each decennary enumeration in the present century.

Period.	Total average Mortality.	Average Mortality from Small-Pox.	Proportion of Deaths from Small-Pox in each 1000 Deaths.	Year of Census.	Population within the Bills of Mortality.
1701 to 1710	21,110	1372	65		
1711 „ 1720	23,826	2123	89		
1721 „ 1730	27,361	2257	82		
1731 „ 1740	26,047	1978	76		
1741 „ 1750	26,060	2002	77		
1751 „ 1760	20,849	1957	94		
1770 „ 1779	21,591	2204	102		
1780 „ 1789	19,517	1712	88		
1790 „ 1799	19,177	1768	92		
1800 „ 1809	18,891	1374	73	1801	746,953
1810 „ 1819	19,061	833	43	1811	855,626
1820 „ 1829	20,680	715	35	1821	1,011,951
1830 „ 1833	27,292	634	23	1831	1,180,075

It is sufficiently remarkable that in the district comprised within the Weekly Bills of Mortality, the deaths were greater in the year 1800 than they had been in any one year during the century, with the exception of 1740, and that up to 1801 inclusive, the burials were, scarcely with any exception, in excess over the births, while, on the contrary, since that period, there has occurred only one year (1808) in which the opposite condition has not been experienced. The annual average number of births in the metropolis during the ten years from 1791 to 1800 was 22,605, and the annual average number of burials 24,270, being in the proportion of 107 burials to 100 births. In the ten years from 1811 to 1820, the annual average of births was 28,489, and of deaths 23,331, reducing the proportion of deaths to 82 for 100 births. But this does not offer an accurate gauge of the comparative mortality of the two periods, because there has, during the last 30 or 40 years, arisen a practice constantly increasing among persons carrying on business in London to reside with their families beyond the limit embraced by the bills of mortality. There, consequently, their children are born; but many among them, the mortal remains of whose ancestors are deposited in burial-grounds within that limit, still use those receptacles as the last resting-place for themselves and their families, for which reason the births are diminished in a greater proportion than the burials. The cause here assigned has operated in a much greater degree since 1820 than it did previous to that date, and it would be unprofitable, therefore, to pursue the inquiry to a later period.

It was at one time sanguinely expected that this most valuable discovery—the efficacy of vaccination—would speedily have eradicated the scourge for which it has, in a great degree, provided a mild and safe substitute. This expectation has not hitherto been accomplished; and it appears doubtful whether vaccination will ever be successfully applied to such an extent. Inoculation has been almost entirely discontinued, so that medical men now commonly refuse to perform the operation when applied to for that purpose. Still, from time to time, small-pox appears, and, up to the present period, the applications for admission into the Small-Pox Hospital on the part of patients to whom the disease has been casually communicated are as numerous as they have ever been during any part of the last forty years. In the course of that term the number so admitted has been 7483, of whom the large number of 2172 have died, being in the proportion of 29 to each 100 patients. If we divide the whole term into decennary periods, we shall, however, find that the disease has of late put on a milder and less fatal form than that in which its visitations were made at the commencement of the time to which our information reaches, and if we examine the result of the cases in the five years from 1794 to 1798, when Dr. Jenner's discovery was made, it will be seen that the mortality was then in a higher ratio than has since been experienced, the number of deaths having been 371 out of 1156 cases, or in the proportion of 32.1 to 100.

	Admitted.	Died.	Proportion of Deaths.
1794 to 1803	2,007	614	30.5 in 100
1804 to 1813	1,330	410	30.8 ,,
1814 to 1823	1,336	389	29.1 ,,
1824 to 1834	2,810	759	27. ,,
	7,483	2,172	29.

If the last decennary period were divided, it would be seen that, in the five years from 1830 to 1834, the cases were 1189, and the deaths 294, being in the proportion of 24.7 in each 100; while in the two last years of the series the numbers are—

1833—242 admitted, 47 died, proportion of deaths 19.4 in 100.
1834—165 ,, 22 ,, ,, 13.3 ,,

The favourable result of these two years may possibly have been accidental, but accidents of this nature do not occur in regular progression through so long a period as forty years, and the statement above given fully bears out the opinion expressed in regard to the comparative mildness of the disorder as it now exists, and the degree in which medical treatment has been successfully applied in arresting its ravages.

The number of patients admitted into St. Bartholomew's Hospital during the forty-five years between 1790 and 1834, was 184,051, and the number of deaths 14,022, being at the rate of 7.62 per cent. Stated in quinquennial periods, the numbers and proportions have been—

Years.	Admitted.	Died.	Proportion of Deaths per Cent.
1790 to 1794	20,253	1572	7.76
1795 . 1799	20,801	1657	8.
1800 . 1804	20,725	1674	8.
1805 . 1809	19,183	1527	8.
1810 . 1814	19,714	1442	7.31
1815 . 1819	13,959	1159	8.30
1820 . 1824	19,683	1454	7.34
1825 . 1829	23,629	1643	6.95
1830 . 1834	28,104	1894	7.25

The small variation observable in the rate of mortality among the patients in this hospital during the whole of the above period, extending to nearly half a century, is very remarkable, and does not certainly warrant any conclusions favourable to the progress of the curative art in general during that interval. In the later periods, however, a large number of the milder cases have probably been sent to dispensaries, which were not common formerly. Many patients are also now treated at the houses of the patients, from want of room in the hospitals, in-patients being only admitted in the more serious cases.

The returns obtained from other general hospitals and medical institutions do not embrace a sufficiently long space of time to admit of any conclusions being drawn from them as to the progress of the curative art. They are curious, however, as presenting results very different from each other with respect to the mortality of their patients. That difference is no doubt capable of satisfactory explanation, for it would be absurd to suppose, that if the regulations and other circumstances attending the practice of different hospitals in the same city were the same, the rate of mortality should from year to year be so different. The fair inference is that the regulations are not the same, or that they are better in some hospitals than in others.

We have seen that in St. Bartholomew's Hospital the rate of mortality has never been greater on the average of five years than 8.30 per cent.; in forty-five years, from 1790 to 1834, the average was 7.53 per cent., and in the concluding five years of the series, the average has been only 7.25 per cent ; whereas, in other general hospitals of this metropolis, which enjoy the advantage of medical and surgical skill on the part of their officers in nowise inferior to that of the officers of St. Bartholomew's, the average rate of mortality has, in the same period of five years, exceeded 11 per cent., being in the proportion of more than three deaths to two. On the other hand, the mortality during the last five years in the Infirmaries of Manchester and Liverpool has been even smaller than that of St. Bartholomew's Hospital: the average in the first-mentioned of these infirmaries proves to be 7.16 per cent., and that of Liverpool only 5.57 per cent.

London Hospital.

Yrs.	Patients.	Deaths.	Proportion of Deaths per Cent.
1829	2214	263	11.87
1830	2183	253	11.58
1831	2272	267	11.75
1832	2511	310	12.34
1833	2517	246	9.77
	11697	1339	11.44

St. George's Hospital.

Yrs.	Patients.	Deaths.	Proportion of Deaths per Cent.
1830	1812	225	12.41
1831	1875	209	11.14
1832	1826	196	10.73
1833	1954	218	11.15
1834	2133	227	10.64
	9600	1,075	11.19

Manchester Infirmary.

1830	1731	109	6.29
1831	1778	113	6.35
1832	1724	138	8.01
1833	1731	123	7.10
1834	1852	149	8.04
	8816	632	7.16

Liverpool Infirmary.

1830	2186	105	4.80
1831	2028	111	5.47
1832	1975	105	5.31
1833	2015	118	5.85
1834	1718	114	6.63
	9922	553	5 57

An unfavourable opinion might be at first suggested by the following statement of the number of patients who have died, and of those who have been cured, at the Lock Hospital, during each decennary period of the present century. It must be remarked, however, that the plans pursued in this hospital, established for the treatment of one particular disease, have undergone considerable alteration during this time, and that although the proportion of fatal cases occurring in the hospital may have increased through the abandonment of a course of practice which more speedily removed the specific disease, and occasioned the discharge of the patients from the hospital, there is good reason for believing that the remedies formerly applied with apparently such good results impaired the constitution, and produced a tendency to various chronic disorders, which in many cases tended to shorten life, and in yet more rendered existence miserable.

Years.	Admitted.	Died.	Cured.	Centesimal Proportion.	
				Deaths.	Cures.
1801 to 1810	4,968	57	3,558	1.147	71.6
1811 . 1820	5,392	38	4,001	0.704	74.2
1821 . 1830	5,354	47	3,727	0.877	69.6
1831 . 1834 (four years).	2,203	31	1,642	1.407	85.7
	17,917	173	12,928	0.909	72.1

Among the tables compiled by Dr. Mitchell, which are appended to the Supplementary Report of the Factory Commissioners, is a return of the number of children in Christ's Hospital, and of the number of deaths that have occurred, in each year for twenty years from 1813 to 1833. It will be seen from this return how exceedingly small the rate of mortality has been in the establishment throughout that period. This circumstance is highly creditable to the institution, and shows how very instrumental in preserving life during the years of childhood are "substantial clothing, an abundance of wholesome food, good lodging, healthful exercise in the hours allowed for recreation, and immediate attention on the first appearance of sickness under the care of skilful medical men." These are favourable circumstances which have attended the institution in an equal degree throughout the period embraced in the Table, and we must therefore seek for some other reason to account for the yet more gratifying fact, that, small as the rate of mortality has been during the whole twenty years, there has been a constant tendency to its decrease, so that in the latter years of the series still fewer deaths have occurred than did during the earlier years:—

Year.	Number of Children.	Deaths.	Year.	Number of Children.	Deaths.
1814	1019	7	1824	1046	14
1815	1010	6	1825	1070	4
1816	1031	14	1826	1085	10
1817	1033	11	1827	1107	9
1818	1037	13	1828	1104	3
	5130	51		5412	40
1819	1038	12	1829	1110	12
1820	1052	6	1830	1126	7
1821	1029	11	1831	1145	5
1822	1046	9	1832	1156	7
1823	1028	6	1833	1133	5
	5193	44		5670	36

It thus appears, that in the first five years, viz. from 1814 to 1818, the annual mortality was 1 in 100; that in the next five years, from 1819 to 1823, the rate was only 1 in 118; that in the five years from 1824 to 1828, it was further diminished to 1 in 135; and that in the last quinquennial period from 1829 to 1833, the annual mortality was no greater than 1 in 157½ of the children.

During the whole period embraced by the table, the children in Christ's Hospital have continued under the same management as regards clothing, lodging, and, in fact, every principal circumstance which apparently could exert any influence upon the rate of their mortality, with the exception of some little change of diet in the partial substitution of vegetable for animal food. The length of time, and the numbers embraced by the return, forbid the belief that the favourable result has been the effect of accident; and if we consider that the originally low rate of mortality has been rendered more and more favourable in each succeeding five years, it is hardly possible to account for the circumstance by any other supposition than that of an advance towards a more rational mode of discipline, both moral and medical, than was practised in former periods.

The following abstract is made from a very interesting statement furnished to his Majesty's Government by the officers of St. Luke's Hospital for Lunatics. This abstract presents upon the whole a consolatory view of the progress of science in the treatment of disease, under the most distressing form in which it visits our race. The table has been made in two divisions—one of patients deemed curable, the other of patients deemed incurable. The numbers embraced in the last category are too few to admit of any reasoning in regard to them, but this objection does not apply to the table of curable patients. The period embraced by the table is 84 years, extending from 1751, when the hospital was founded, to 1834, during which time 15,437 patients were admitted, of whom 14,896 were deemed curable. Of this number

Patients deemed Curable.

Periods.	Males.					Females.				
	Admitted, including the Patients remaining at the Commencement of each period.	Cured.	Died.	Centesimal Proportion.		Admitted, including the Patients remaining at the Commencement of each period.	Cured.	Died.	Centesimal Proportion.	
				Cured.	Died.				Cured.	Died.
1751 to 1760	225	100	16	44.4	7.1	510	249	24	48.8	4.7
1761 — 1770	355	133	28	37.4	7.9	668	284	49	42.5	7.3
1771 — 1780	425	183	30	43.0	7.0	808	326	23	40.3	2 8
1781 — 1790	554	193	71	34.8	13.0	904	355	39	39.2	4.3
1791 — 1800	967	319	146	33.0	15.1	1496	630	92	42.1	6.1
1801 — 1810	1234	402	218	32.5	17.6	1700	717	96	42.1	5.6
1811 — 1820	1260	344	133	27.4	10.5	1558	604	72	38.7	4.6
1821 — 1830	1083	360	58	33.2	5.3	1327	548	48	41.3	3.6
1831 — 1834	356	147	18	41.3	5.0	497	223	26	44.8	5.2
	Total No. admitted. 6049	2181	718	36.	11.8	Total No. admitted. 8847	3936	469	44.5	5.3

Patients deemed Incurable.

Periods.	Males.					Females.				
	Admitted, including the Patients remaining at the Commencement of each period.	Cured.	Died.	Centesimal Proportion.		Admitted, including the Patients remaining at the Commencement of each period.	Cured.	Died.	Centesimal Proportion.	
				Cured.	Died.				Cured	Died.
1754 to 1760	15	2	4	13.3	26.6	39	2	5	5.1	12.8
1761 — 1770	17	,,	3	,,	17.6	31	,,	6	,,	19.3
1771 — 1780	15	,,	2	,,	13.3	29	1	9	3.4	31.0
1781 — 1790	37	,,	9	,,	24.3	56	1	5	1.8	9.0
1791 — 1800	77	1	22	1.3	28.5	117	4	45	3.4	38.4
1801 — 1810	70	,,	21	,,	30.0	93	2	29	2.1	31.1
1811 — 1820	79	,,	31	,,	39.2	116	,,	47	,,	40.5
1821 — 1830	84	,,	32	,,	38.1	99	3	40	3.0	40.4
1831 — 1834	70	,,	23	,,	32.8	78	,,	19	,,	24.3
	Total No. admitted. 222	3	147	1.3	66.2	Total No. admitted. 319	13	205	4.	64.2

6117 have been cured, and 1187 have died—the average centesimal proportion of cures being, among the males, 36, and among the females, 44.5; while the deaths have been 11.8 among males, and 5.3 among females.

Some points in the foregoing table require explanation. It will be seen that in the thirty years which occurred between 1781 and 1810 a considerable decrease in the number of cures and an increase in the number of deaths were experienced among the male patients, while no such irregularity appears in the case of the females. In the ten years between 1801 and 1811 the male cures, which between 1771 and 1780 had been 43 per cent., were diminished to 32½ per cent.; and the deaths, which in the earlier period had been no more than 7 per cent., were increased to 17½ per cent. On referring this subject to the medical officers of the hospital, we received the following explanation:—"The increase of deaths among the males during the period between 1781 and 1800 is attributed to the relaxation of the rule of not admitting any patient who appeared to be in too weak a state of bodily health to take medicines proper for their lunacy, or requiring the attendance of a nurse, and which rule, subsequent to 1810, was as strictly enforced as it had formerly been up to 1781."

The proportion of cures in the first decennary period was more favourable than in any succeeding period of the like duration. The favourable proportions fell in the next twenty years, and then occurred the relaxation as to the admission of patients which has already been explained. Subsequently to 1811 a more favourable result has been obtained, and from 1820 this improvement has been experienced in a still greater degree. On this subject, the gentlemen to whose explanations reference has already been made, say,—"It is probable that the decreased number of deaths since 1810 may be attributed to a growing improvement among the lower classes as regards their personal habits, and to an increased degree of skill in the treatment of the insane by the medical officers." These causes are each of them of a gratifying nature. Let us hope, as regards the first mentioned, that through the continued intellectual and moral advancement of the labouring classes, they may be weaned from those habits of intemperance which hitherto have formed their chief reproach, and which but too frequently have led to those aberrations of mind which have peopled our lunatic asylums. That the greater number of patients admitted into the hospital have been females, arises no doubt from the circumstance that insanity frequently follows upon child-bearing. The proportion of cures has also been almost uniformly greater among the women than among the men, and the unfavourable circumstances that attended the cases of males between 1781 and 1811 were not experienced among the females. Notwithstanding this, the proportion of deaths has been decreasing during the last fifteen years, in which period the average has been no more than four per cent.

The curative system pursued in Bethlem Hospital was so wholly changed about the year 1820, that it would be useless to carry back to an earlier period any inquiry concerning the result of the cases admitted into the establishment. The following table contains a statement for each year, from 1820 to 1834, inclusive :—

Years.	Males.					Females.				
	Admitted, including the Patients remaining at the commencement of the first year.	Cured.	Died.	Centesimal proportions in quinquennial periods including the number remaining at the beginning of each period.		Admitted, including the Patients remaining at the commencement of the first year.	Cured.	Died.	Centesimal proportion in quinquennial periods including the number remaining at the beginning of each period.	
				Cured.	Died.				Cured.	Died.
1820	167	28	7	29.8	5.	180	37	6	34.8	5.9
1821	65	25	2			85	23	7		
1822	58	23	5			114	49	8		
1823	60	24	4			98	52	4		
1824	69	25	3			94	38	9		
1825	77	31	9	37.1	7.1	108	43	7	42.2	4·5
1826	69	26	1			99	47	8		
1827	68	26	11			88	40	4		
1828	89	44	6			120	68	3		
1829	81	56	8			119	73	7		
1830	87	39	5	33.7	6.6	123	76	8	46.2	3.2
1831	87	35	10			137	63	3		
1832	63	23	5			101	71	3		
1833	64	25	4			127	59	7		
1834	107	50	10			118	65	2		

Reckoning Males and Females together, the centesimal proportions of cures and deaths in the quinquennial periods have been—

	Cured.	Died.
1820 to 1824..........	32.8	5.5
1325 to 1829..........	40.	5.6
1830 to 1834..........	41.	4.6

The centesimal proportions during the whole 15 years have been

	Cured.	Died.
Males...............	39.6	7.4
Females.............	47.	5.
Total................	43.9	6.

All patients who are admitted on the curable establishment of Bethlem Hospital, and who are not discharged cured or otherwise within twelve months from the date of their admission, are discharged at the end of that time, unless there be a prospect of their cure, in which case they are retained in the hospital.

From the 1st January, 1820, to the 31st December, 1834, a period of 15 years, 2662 patients were admitted on the curable establishment, and the average time that each patient remained in the hospital was 204 days.

In the Years.	Were admitted.		Their Ages.		
1830 ..	201	Curable patients —	averaged	37	years
1831 ..	212	„	„	35	„
1832 ..	163	„	„	37	„
1833 ..	184	„	„	36	„
1834 ..	217	„	„	36	„
	977				

Of the above ..	61	were between	10	and	20	years of age.
	261	„	20	„	30	„
	292	„	30	„	40	„
	203	„	40	„	50	„
	107	„	50	„	60	„
	43	„	60	„	70	„
	9	„	70	„	80	„
	1	„	80	„	90	„
	977					

CHAPTER III.

OCCUPATIONS OF THE PEOPLE.

Change in relative proportion of Agriculturists, Traders, &c.—Decrease in proportion of Agriculturists in England—Comparison of England, Wales, and Scotland—Proportions in each County of England—Numerical order of Counties relatively to each other—Division of Agricultural Population—Occupiers—Labourers—In England—In Ireland—Agriculturists in Ireland engaged in raising food for other parts of the Kingdom—Advantage of knowing the proportions into which Population is divided—Failure of attempt to ascertain this in 1801—Different course adopted at subsequent enumerations—Changes between the enumerations—Examination of Returns in 1831—Specification of Retail Trades—Fallacy of the Returns respecting those trades—Number of Domestic Servants—Females—Males—Excise Licences for exercising certain branches of business, 1801, 1816, 1833—Quantity of Malt used by Licensed Brewers in England, Scotland, and Ireland—Occupations of people in France—Classification of Proprietors of Soil—Division of the Soil—Extent of Holdings—Small Proprietors.

A CHANGE has for some time been going forward in regard to the relative proportions of the inhabitants of this country who are employed in agricultural pursuits, or in trade, manufactures, &c.

The following table will show the variations of this kind as exhibited by the three last decennary enumerations in Great Britain.

Comparative Statement of the Numbers and Occupations of Families in England, Wales, and Scotland, in the years 1811, 1821, and 1831, according to the Population Returns of those Years respectively; showing also the Proportions of each class in centesimal parts.

	At the end of May in each year.	Total Families.	Employed in Agriculture.	Employed in Trade, Manufactures, &c.	All other Families.	Centesimal Parts.			
						Agricul-ture.	Trade, &c.	Others.	Total.
England	1811	2,012,391	697,353	923,588	391,450	34.7	45.9	19.4	100
	1821	2.346,717	773,732	1,118,295	454,690	33.	47.6	19.4	100
	1831	2,745,336	761,348	1,182,912	801,076	27.7	43.1	29.2	100
Wales	1811	129,756	72,846	36,044	20,866	56.2	27.7	16.1	100
	1821	146,706	74,225	41,680	30,801	50.6	28.5	20.9	100
	1831	166,538	73,195	44,702	48,641	43.9	26.9	29.2	100
Scotland	1811	402,068	125,799	169,417	106,552	31.3	42.1	26.6	100
	1821	447,960	130,699	190,264	126,997	29.2	42.5	28.3	100
	1831	502.301	126,591	207,259	168,451	25.2	41.3	33.5	100
Great Britain	1811	2,544,215	895,998	1,129,049	518,868	35.2	44.4	20.4	100
	1821	2,941.383	978,656	1,350,239	612,488	33.2	45.9	20.9	100
	1831	3,414,175	961,134	1,434,873	1,018,168	28.2	42.	29.8	100

The circumstance which most requires to be noticed in this statement is the decrease in the relative numbers of families employed in agricultural pursuits. In the course of 20 years the centesimal proportion of such families, calculated upon the gross proportion, has fallen from 35.2 to 28.2, showing that the quantity of food for the production of which the labour of five families was formerly employed, is now produced by the labour of four families. This is a fact of considerable importance if considered with reference to another interesting question, that of the capability of the country to continue its present onward course with respect to manufactures, notwithstanding the physical impossibility under which it is placed, of adding in any material degree to the extent of soil whence the greater quantity of food then needed must be derived.

The alteration indicated by the foregoing table will appear in a more striking point of view if a calculation be made of the positive increase in number of the families in each of the three classes during those 20 years. It will then be seen that, while the increase in the number of families altogether has been after the rate of 34 per cent., the addition to those of the agricultural class has been only 7½ per cent., those of the trading and manufacturing class having received an accession to their numbers of 27 per cent., and those of all other classes having been in the same time very nearly doubled in number.

But the further subdivision of the population, as relating to males 20 years of age and upwards, which was made in 1831, somewhat alters the centesimal proportions exhibited in the foregoing table, as will appear from the following abstract:—

It will be see [illegible] ing a comparison between these two calculatio [illegible] proportion of males 20 years of age and [illegible] greater in families employed in

	Males twenty years of age.	Agriculture.			Trade, Manufactures, &c.		Other Classes.			
		Occupiers employing Labourers.	Occupiers not employing Labourers.	Labourers employed in Agriculture.	Employed in manufacture, or in making manufacturing machinery.	Employed in retail trade, or in handicraft as Masters or Workmen.	Capitalists, Bankers, Professional, and other Educated Men.	Labourers employed in labour not Agricultural.	Other males twenty years of age, except Servants.	Male Servants twenty years of age, and upwards.
England	3,199,984	141,460	94,883	744,407	314,106	964,177	179,983	500,950	189,389	70,629
Wales	194,706	19,728	19,966	55,468	6,218	43,226	5,204	31,571	11,180	2,145
Scotland	549,821	25,887	53,966	87,292	83,993	152,464	29,203	76,191	34,930	5,895
Gt. Brit.	3,944,511	187,075	168,815	887,167	404,317	1,159,867	214,390	608,712	235,499	78,669
		1,243,057 or 31.5 Centesimal Parts.			1,564,184 or 39.7 Centesimal Parts.		1,137,270 or 28.8 Centesimal Parts.			
Ireland	1,867,765	95,339	564,274	567,441	25,746	298,838	61,514	89,876	110,595	54,142
		1,227,054 or 65.7 Centesimal Parts.			324,584 or 17.4 Centesimal Parts.		316,127 or 16.9 Centesimal Parts.			

agriculture than it is in the remaining classes or divisions, and consequently that the population is not increasing so rapidly in proportion to its numbers among agricultural families as among the remaining portions of the people: effects which may probably be owing in some degree to greater longevity, caused by the superior healthfulness of the country; and still more, perhaps, to the less exciting nature of country employments which occasion less wear and tear to the animal frame than is experienced in towns, where the interests of men bring them more directly into collision, and where, if the satisfaction attendant upon success is more attainable, the harassings and disappointments of life are more frequently experienced.

It may be interesting to know the proportions in regard to occupations into which the population of each county in England is divided, and the variations in this respect which each has undergone during the twenty years that have elapsed between 1811 and 1831. For this purpose the following two tables have been constructed. The first of them shows the centesimal proportion which each class bore to the other two classes at the several enumerations of 1811, 1821, and 1831; while the second table shows the numerical order in which each county stood at those periods relatively to the other counties. For this latter purpose the population has been divided into only two classes, viz.—agriculturists and others. The reason for this classification will be at once apparent on inspection of the first table. The glaring discrepancies observable in the proportions at different periods of the third or miscellaneous class of the population, render it evident that no very precise rule has been used for determining into which of the two non-agricultural classes a considerable nu[illegible]ilies should be placed. By adopting only two divisions or classes, this difficulty is removed, and a greater degree of certainty upon the subject is attained. The persons appointed to prepare the returns might easily fall into errors in classing traders and followers of professions · but could hardly fail to distinguish from all others those families who drew their support from agricultural occupations.

COUNTIES.	Agriculture.			Trade, Manufactures, &c.			Other Classes.		
	1811.	1821.	1831.	1811.	1821.	1831.	1811.	1821.	1831.
Bedford	63.1	61.9	56.8	27.9	27.8	25.7	9.0	10.3	17.5
Berks	53.5	53.3	45.2	30.3	31.7	31.8	16.2	15.0	23.0
Bucks	53.3	57.6	53.0	33.4	28.8	26.4	11.3	13.6	20.6
Cambridge	61.0	60.7	53.3	25.2	27.2	27.2	13.8	12.1	19.5
Chester	36.8	34.8	25.2	51.8	52.1	53.9	11.4	13.1	20.9
Cornwall	39.5	37.7	30.7	24.8	30.3	22.3	35.7	32.0	47.0
Cumberland	38.3	35.5	30.5	40.3	41.3	34.5	21.4	23.2	35.0
Derby	38.2	34.4	27.5	42.2	48.4	43.0	19.6	17.2	29.5
Devon	41.6	40.8	34.8	39.0	37.5	32.7	19.4	21.7	32.5
Dorset	48.4	48.9	43.4	35.8	35.7	30.1	15.8	15.4	26.5
Durham	26.2	20.5	15.3	43.5	44.0	33.8	30.3	35.5	50.9
Essex	55.2	55.7	52·9	27.5	28.8	28.0	17.3	15.5	19.1
Gloucester	33.4	32.1	25.4	48.3	49.8	39.7	18.3	18.1	34.9
Hereford	62.7	61.8	54.3	25.1	25.7	25.9	12.2	12.5	19.8
Hertford	52.8	51.5	45.4	31.5	30.3	29.2	15.7	18.2	25.4
Huntingdon	60.9	61.9	55.3	25.0	28.2	26.0	14.1	9.9	18.7
Kent	35.5	35.9	32.6	36.7	35.1	30.3	27.8	29.0	37.1
Lancaster	14.4	11.2	9.5	70.7	74.9	66.7	14.9	13.9	23.8
Leicester	37.2	35.4	29.3	54.1	55.1	54.5	8.7	9.5	16.2
Lincoln	58.7	59.4	54.3	25.9	26.9	26.2	15.4	13.7	19.5
Middlesex	4.1	3.6	3.1	61.0	61.6	55.4	34.9	34.8	41.5
Monmouth	46.3	42.6	28.2	38.4	43.5	43.3	15.3	13.9	28.5
Norfolk	50.1	48.8	44.7	36.7	35.2	34.3	13.2	16.0	21.0
Northampton	49.7	53.4	46.8	39.4	32.9	32.9	10.9	13.7	20.3
Northumberland	29.0	26.8	20.9	43.8	47.7	29.5	27.2	25.5	49.6
Nottingham	36.7	35.3	28.3	56.5	56.6	54.3	6.8	8.1	17.4
Oxford	54.6	55.3	48.1	30.6	31.1	29.8	14.8	13.6	22.1
Rutland	56.9	61.3	54.9	28.9	26.2	26.3	14.2	12.5	18.8
Salop	42.3	44·2	36.8	42.5	44.0	34.9	15.2	13.8	28.3
Somerset	43.6	42.8	36.0	37.7	36.9	33.4	18.7	20.3	30.6
Southampton	42.0	41.9	35.2	35.4	34.2	32.4	22.6	23.9	32.4
Stafford	29.4	26.6	21.7	54.3	61.7	52.2	16.3	11.7	26.1
Suffolk	55.5	55.9	51.2	31.8	31.6	29.4	12.7	12.5	19.4
Surrey	17.1	16.8	13.4	48.5	52.7	45.5	34.4	30.5	41.1
Sussex	54.9	50.3	42.6	29.8	35.5	33.2	15.3	14.2	24.2
Warwick	30.8	27.9	21.9	60.7	65.2	59.9	8.5	6.9	18.2
Westmoreland	49.0	48.8	40.6	30.5	36.4	37.4	20.5	14.8	22.0
Wilts	54.1	52.4	48.5	35.5	35.6	30.2	10.4	12.0	21.3
Worcester	40.5	38.2	32.1	49.4	47.6	42.0	10.1	14.2	25.9
York, E. Riding	40.1	38.2	35.2	35.7	41.1	29.3	24.2	20.7	35.5
N. Riding	46.2	43.2	44.1	30.3	30.0	27.7	23.5	26.8	28.2
W. Riding	23.1	19.6	18.2	64.8	67.4	69.4	12.1	13.0	12.4

Table showing the Numerical Order in which the different Counties of England stood relatively to each other, with reference to the Proportional Number of their Population who were engaged in Agriculture or otherwise, at each of the Decennary Enumerations of 1811, 1821, and 1831.

COUNTIES.	1811.		1821.		1831.	
	Agricultural Class.	Other Classes.	Agricultural Class.	Other Classes.	Agricultural Class.	Other Classes.
Bedford	1	42	1	42	1	42
Berkshire	12	31	12	31	14	29
Buckinghamshire	13	30	7	36	7	36
Cambridgeshire	3	40	5	38	6	37
Cheshire	31	12	32	11	34	9
Cornwall	27	16	27	16	27	16
Cumberland	28	15	29	14	28	15
Derbyshire	29	14	33	10	32	11
Devonshire	24	19	24	19	24	19
Dorsetshire	18	25	16	27	17	26
Durham	38	5	38	5	39	4
Essex	8	35	9	34	8	35
Gloucestershire	34	9	34	9	33	10
Herefordshire	2	41	3	40	4	39
Hertfordshire	14	29	14	29	13	30
Huntingdonshire	4	39	2	41	2	41
Kent	33	10	28	15	25	18
Lancashire	41	2	41	2	41	2
Leicestershire	30	13	30	13	29	14
Lincolnshire	5	38	6	37	5	38
Middlesex	42	1	42	1	42	1
Monmouthshire	19	24	22	21	31	12
Norfolk	15	28	17	26	15	28
Northamptonshire	16	27	11	32	12	31
Northumberland	37	6	36	7	37	6
Nottinghamshire	32	11	31	12	30	13
Oxfordshire	10	33	10	33	11	32
Rutlandshire	6	37	4	39	3	40
Salop	22	21	19	24	20	23
Somersetshire	21	22	21	22	21	22
Southampton	23	20	23	20	22	21
Staffordshire	36	7	37	6	36	7
Suffolk	7	36	8	35	9	34
Surrey	40	3	40	3	40	3
Sussex	9	34	15	28	18	25
Warwickshire	35	8	35	8	35	8
Westmoreland	17	26	18	25	19	24
Wiltshire	11	32	13	30	10	33
Worcestershire	25	18	25	18	26	17
York, East Riding	26	17	26	17	23	20
North Riding	20	23	20	23	16	27
West Riding	39	4	39	4	38	5

It will be seen, on consulting these tables, that only eight, or one-fifth part by number, of the English counties have maintained unaltered their relative positions as regards the employments of their inhabitants. These counties are—

Bedford, whose population is most exclusively agricultural; Somerset, Devon, and Cornwall, which have a mixed population; and Middlesex, Surrey, Lancashire, and Warwickshire, two of which are metropolitan counties and the remaining two are at the head of the manufacturing counties.

Altogether there appears to have been but little change in the relative positions of the counties. Buckinghamshire, Kent, and Northamptonshire have taken a higher rank as agricultural divisions; while Monmouthshire and Sussex have a smaller proportion of their inhabitants employed in cultivating the earth. As regards Monmouthshire, the alteration has been occasioned by the great increase in the number of coal mines and in the smelting and manufacturing of iron; and the change that has taken place in Sussex is owing to the rapid growth of its watering-places, Brighton, Worthing, and Hastings.

In addition to the general divisions of the people into three great classes as already explained, an attempt was made in 1831 to subdivide the males 20 years of age and upwards, and to a considerable extent that attempt has been successful. Among the males employed in agriculture a very important distinction has been drawn between occupiers of land who employ labourers, other occupiers of land who cultivate their holdings without such assistance, and labourers who are employed by occupiers in the first subdivision. The proportion of the population in Ireland, which is engaged in agricultural pursuits, is more than double the proportion so employed in Great Britain, but the subdivision just noticed exhibits in a yet more striking point of view the wide difference that exists in the customs and condition of the inhabitants of the two islands. In Great Britain about two-sevenths of the agriculturists are occupiers of land, and these are divided in nearly equal proportions into those who do and those who do not employ labourers; the agricultural labourers form the remaining five-sevenths of the class. In Ireland only about one-thirteenth part of the agriculturists above twenty years of age are occupiers employing labourers, while the remaining twelve-thirteenths are divided almost equally into occupiers without labourers, and labourers for others who are not occupiers. The average number of labourers to each occupier employing them is by no means equal in the two parts of the kingdom, being at the rate of about 4¾ labourers to each employing occupier in Great Britain, and as high as 5¾ labourers to each employing occupier in Ireland.

Part of the agricultural population of Ireland is employed in producing food for the inhabitants of Great Britain. In the 19 years from 1815 to 1833 inclusive, Ireland furnished 32,868,002 quarters of all kinds of grain and meal to England and Scotland, but principally to the first-named division of the kingdom, a supply equal to 1,729,894 quarters in each year. Of this quantity 23,532,816 quarters consisted of oats. Making every allowance for the surplus in the one case and the deficiency in the other, an enormous difference is apparent between the productiveness of agricultural labour in the two countries. For no part of this difference is the quality of the soil answerable, but the whole of it must be attributed to a deficiency in skill or in means, but more probably of both, in the sister island.

Out of a population consisting of 3,414,175 families in Great Britain, 961,134 families are employed in the production of food, being at the rate of 282 in each 1000, or between one-third and one-fourth of the inhabitants; while Ireland, out of a population consisting of 1,385,066 families, employs in the same pursuit the labour of 884,339 families, being at the rate of 638 in each 1000, or very nearly two-thirds of the inhabitants.

Increased productive power on the part of the inhabitants of any country is in itself an evidence of the progress of the people in civilization. In times when the greater part of the productive labour of a country is required for raising the necessaries of life, the means of obtaining conveniences or the productions of other climates must be extremely limited. In countries where the labour of a man, applied to the cultivation of the soil, was capable of producing only a bare subsistence for himself, it is plain that the society could never advance in the scale of civilization. But if, by means of improved implements or better methods of culture, the labour of two men could be made to provide for the subsistence of three, the labour of the third man would be set free for the production of surplus articles, which would add to the sum of the general convenience. It is long before communities arrive at such a state of improvement as will admit of so considerable a number as one-third of the population being spared from the cultivation of the soil. Ireland is not far advanced beyond this state at present. In the absence of all precise information in regard to the produce of the soil in this kingdom, only an approximation to the truth can be attained. Taking the best data that can be had, it appears that the labour of nineteen families is required to produce, annually, 1160 quarters of all kinds of grain, being at the rate of 61 quarters for each family. Applying this rule to the case of Ireland, it will appear that the labour of 28,359 families is required in order to raise the average quantity of grain that has been annually sent to England and Scotland during the last nineteen years. If this number of families be deducted from the entire number who are employed in agriculture in Ireland, it will be found that the labour of 855,980 families, being 618 in every 1000, is required for raising food for the use of the native population. Some abatement must indeed be made from this large proportion on account of the number of animals reared and converted into food for the consumption of England and of other countries. No means exist for ascertaining the precise number of these animals; but admitting that number to be very considerable, it cannot materially alter the proportion here stated.

The advantage of being able to classify and compare the numbers of the population who have applied themselves at different periods to different pursuits is exceedingly great, as enabling us to estimate and to mark the progress of the country. It is to be regretted that the attempt at this classified enumeration, which was made at the census of 1801, was so far unsuccessful that it would be wrong to build any argument upon it. On this subject, Mr. Rickman, in his interesting preface to the abstract of the returns of 1831 (page ix.), says, " The question of 1801, relating to the occupation of *persons*, was found in practice to produce no valuable result. In some cases a householder seemed to understand that the females of his family, his children, and servants ought to be classed with himself; in some cases he returned them in the negative class, as being neither agricultural nor commercial; in some cases he omitted them entirely. Thus the failure of the question became manifest, and the worthless answers were entered without attempt at correction."

The failure here occasioned the adoption of a different course at the enumerations of 1811, 1821, and 1831. That course and its result cannot be better stated than in the words of Mr. Rickman :—

" The question concerning occupation or employment, as amended in the Population Acts of 1811, 1821, and 1831, inquires what number of *families* (not of *persons*) are chiefly employed in, or maintained by, agriculture? How many by trade, manufacture or handicraft? and how many *families* are not comprised in either of these classes? and in general the answers appear to have been made with care and distinctness in the years 1811 and 1821; but a more particular classification was thought to be desirable and practicable in 1831; and it was recommended to the Committee of the House of Commons to ask the occupation or employment of every male 20 years of age; not only because he is then usually settled in his vocation, but because the number of males under 20 years of age, and the number upwards of 20 years of age, was found to have been so equal in the enumeration of 1821, that any considerable deviation from that obvious proportion was likely to induce further inquiry, and correction in every case suspected of error, for in the enumeration of 1821 the males under 20 were 3,072,392—upwards of 20, 3,002,200, including all the males whose ages were then ascertained. In the enumeration of 1831, the males known to be under 20 were 3,941,495—upwards of 20, 3,944,511, (the army, navy, &c., are not included;) indeed the increase of population in Great Britain has not been materially accelerated or retarded since the year 1801, having been always about one and a half per centum per annum."

After explaining the subdivisions adopted in 1831, with regard to the agricultural class, Mr. Rickman proceeds—

"The number of those employed in manufacture is next asked, and the species of manufactures, as far as such can be distinguished and designated in a note. These notes are collected into a summary at the end of each county, not in columns, which was impracticable, but in narrative, such as each individual case permitted or required.

"The number of those employed in retail trade and handicraft, as distinguished from manufacture, appears in the next column; this was supposed to be capable of subdivision, and after much consideration and correspondence with the members of Parliament who had constituted the Committee on the Population Bill, a list was issued with each schedule, containing one hundred of the most usual denominations of retail trade and handicraft.

"This list was known to contain far less than the entire number of trades in large towns, especially in the metropolis, where, in the result, no less than 426 subdivisions of trade were found to exist; but a greater number than 100 would have been inapplicable and even perplexing in rural parishes, and the space left at the bottom of the list, as well as the list itself, was so attentively and correctly filled, that the defective specification does not exceed one in 112 males upwards of 20 years of age employed in retail trade or handicraft; the lists returned by all the parishes constituting the metropolis do not present a single defect: a remarkable instance of accuracy."

In the table last inserted, showing the numerical order in which the counties of England stood relatively to each other as regarded the occupations of their inhabitants in 1811, 1821, and 1831, the population was divided into only two classes—agriculturists and others, and a reason was given for the adoption of this division in preference to that made in the population returns, grounded upon the degree of uncertainty that accompanied the division of other classes, and which rendered abortive all attempts to separate the proportions of those employed in "trade, manufactures and handicraft," from the division comprehended under the description of "all other families."

That degree of uncertainty is clearly shown in the "comparative statement of the numbers and occupations of families," (see page 50), where the centesimal parts exhibited by the three divisions were stated to have been as follows at the three last enumerations in Great Britain:—

	Agriculture.	Trade.	Others.	
1811	35.2	44.4	20.4	100
1821	33.2	45.9	20.9	100
1831	28.2	42.	29.8	100

It would appear from this calculation that a very considerable part of the population—4 out of 46—had withdrawn themselves, between 1821 and 1831, from the pursuits of trade, manufactures, and handicraft, a circumstance well known to be altogether at variance with the fact. The summary of the returns of 1831, respecting the occupations of males 20 years of age and upwards, throws considerable light upon the subject, by exhibiting them under several subdivisions. The males belonging to the families included in the non-agricultural and non-manufacturing classes were given at the last census under four distinct heads of description, viz.:—

Capitalists, bankers, professional and other educated men.

Labourers employed in labour not agricultural.

Other males, 20 years of age, except servants.

Male servants, 20 years of age.

The whole number of males included under these heads amounts to 1,137,270. Of these, 608,712 were actually employed in labour which, although, strictly speaking, it was neither manufacturing nor trading, was yet necessary to the successful prosecution of some branch of trade or manufactures, such as mining, road-making, canal-digging, inland navigation, &c. The number of male domestic servants of 20 years and upwards amounted to 78,669. As for the males, 235,499 in number, to whom no particular calling has been assigned, a very large proportion of them are doubtless those among the labouring classes, who had arrived at ages or were subject to infirmities which prevented them from longer working. It may thus be seen how very small is the proportion of persons arrived at maturity who are not employed in some one or other of the occupations whereby the sum of the national wealth or convenience is advanced. Without making any allowance for the superannuated or infirm, it appears that profitable, and, for the most part, manual occupations may be assigned to 3,494,622 persons out of 3,944,511, being a proportion of 886 in every 1000 males 20 years of age in Great Britain, while among the remaining 449,889 are to be found a large proportion whose professional labour is essential to the health, the instruction, the convenience and the security of their fellow citizens. If the number of males included in the army and navy and as seamen in registered vessels (277,017) is taken into the calculation, the proportion of 114 males not employed either in manual labour or some other species of active occupation in every 1000 of the male population, which results from the above statement, will be reduced to 106.

The specification given in the population returns of retail trades and handicrafts followed by the families in Great Britain, who at the last census were represented by 1,159,867 males 20 years of age and upwards, (see p. 53,) is not calculated to throw any light upon the inquiry wherein we are engaged; nor do we think that it can in any considerable degree be made useful in statistical investigations. It is perhaps impossible by any industry or intelligence to compile a schedule of occupations upon which dependence can be placed as a guide in such matters. The specification now under examination would lead to many erroneous conclusions, in consequence of some one branch of a man's trade being frequently given, to the exclusion of others as important. It will sufficiently justify this objection to state a very few of the anomalies which the statement presents. Thus there are in England, according to this specification, 5030 coachmakers, and but 1 coach-spring maker. The whole kingdom is stated to give employment to only 3 coffin-makers, each of whom would therefore be called upon to provide about 300 coffins daily throughout the year. One drug-grinder alone appears, while the druggists whom he is to supply amount in number to 5423. It cannot be necessary to go further into this alphabet of trades in order to show, from internal evidence, the little dependence that is to be placed upon it, but having been induced to test the list in some of its particulars by means of another statement which cannot be otherwise than accurate, we here give the result.

The number of licences issued by the Commissioners of Excise, upon every one of which a duty is levied, affords as sure an indication as can well be had upon the subject. Some men may carry on a trade for which a licence is legally necessary, without taking one from the office, but it may be presumed that nobody will pay for a licence who does not pursue the calling for which it qualifies him.

The following list of the number of excise licences issued to certain classes of traders in 1831, the year to which the specification of trades relates, is taken from the Official Tables of the revenue, &c., compiled by the Board of Trade. By its side we have placed the numbers of persons who, according to the population abstract, follow the several callings mentioned.

Description of Dealers.	Number of Excise Licences issued.	Number of Trades according to the Population Abstract.
Brewers . . .	42,907	5,765
Maltsters . .	12,716	6,970
Soap-makers . .	276	20
Spirit-dealers .	67,500	4,031
Tea-dealers . .	89,202	3,456
Tobacco-dealers .	150,843	2,224
Wine-dealers . .	22,553	1,594

Many licences for brewing, and for dealing in wine, spirits, and tobacco, are taken out by publicans, but the entire number of this class, including all the keepers of " beer-shops," who do not of course take out such licences, amounts to no more than 61,231. The number of licences granted to publicans for the sale of spirits or wine, in addition to beer, in 1831, was only 20,638. As regards tea-dealers, the discrepancy would not be remedied by comprehending under that name all who figure in the specification as grocers, and the number of whom (including the numerous tribe of green-grocers) amounts only to 22,147. A sufficient number of tobacco-dealers to account for the number of licences will not be got together if all the grocers, tea-dealers, and publicans in the specification are taken into the account. It must be evident from these facts, that such a specification as this is perfectly useless; and it may be worthy of consideration whether, in future enumerations of the people, it will be desirable to make any further attempt to obtain this particular kind of information.

The statement of the occupations of males, 20 years of age and upwards, in Ireland leaves even a smaller proportion than are found in Great Britain to belong to the non-labouring part of the community. Out of 1,867,765 males of mature age, 1,277,054 are classed as agriculturists; the manufacturing and trading classes employ 324,584; the labourers not employed in agriculture are stated as 89,876; and male servants, 20 years of age and upwards, are 54,142; leaving only a residue of 172,109 persons to comprehend the capitalists and professional men, as well as the really unproductive members of the community. These numbers exhibit 908 and 92 as the relative proportions of employed and unemployed persons in Ireland, and the latter class must be diminished by the clergy and members of the liberal professions.

The census of 1831 has, for the first time, made us acquainted with the number of female domestic servants in each division of the kingdom; their numbers are as follows:—

In England..	518,705	or 77	in 1000 of female population.
Wales....	42,274	„ 102	,, ,,
Scotland..	109,512	„ 88	,, ,,
Ireland...	253,155	„ 63	,, ,,
Together	923,646,	or 75	in 1000 of the entire female population.

Male servants are in a much smaller proportion: their numbers are—

In England...	101,406	or 16	in 1000 of the male population
Wales.....	3,324	„ 8½	,, ,,
Scotland...	8,494	,, 7½	,, ,,
Ireland....	98,742	„ 26	,, ,,
	211,966,	or 17¾	in 1000 of the entire male population.

Owing to the imperfection of the returns relating to Ireland, and the frequent changes that have been made in the regulations of the Excise Board, the following table of the number of licences granted for the exercise of certain branches of business does not afford the requisite data for comparison in all cases between the three periods chosen. In 1801 and 1816 the brewers' licences did not include that very numerous class of publicans who are likewise brewers, but who swell the list in 1833. The licences for retailing beer were, in the first period, issued by the magistrates, and no record of their number is procurable. With respect to auctioneers, tea and coffee dealers, glass manufacturers, maltsters, paper-makers, and dealers in spirits, tobacco and wine, the table may be consulted for comparative data.

Number of Excise Licences granted for the exercise of certain Trades, in each of the Years 1801, 1816, and 1833.

Description of Licence.	1801.				1816.				1833.			
	England.	Scotland.	Ireland.	Total of Great Britain.	England.	Scotland.	Ireland.	Total.	England.	Scotland.	Ireland.	Total.
Auctioneers.	2,984	608	Not any account extant for this Year.	3,592	3,350	644	248	4,242	3,040	378	268	3,686
Brewers	1,268	187		1,455	1,559	234	608	2,401	43,695	640	227	44,562
Beer Retailers	No Acct. granted by magistrates.	. .		. .	48,846	8,469	. .	57,315	53,026	17,180	20,629	90,835
Ditto under Act 1 Will. IV. c. 64.	. .	. .		. .	. .	. .	. .	. .	35,629	. .	. .	35,629
Tea and Coffee Dealers	56,248	5,817		62,065	60,262	7,826	5,217	73,305	76,832	13,442	11,305	101,579
Glass Manufacturers	81	13		94	95	14	. .	109	109	9	8	126
Maltsters	9,090	271		9,361	8,548	272	. .	8,820	10,598	2,315	330	13,243
Paper Makers and Stainers	413	35		448	522	58	44	624	586	52	98	736
Soap Makers	570	54		624	375	40	. .	415	249	27	223	499
Dealers in Spirits, Wholesale	1,739	952		2,691	1,983	284	. .	2,267	2,986	543	365	3,894
Ditto Ditto, Retail	32,017	2,477		34,494	35,377	2,695	19,693	57,765	48,347	16,730	20,080	85,157
Tobacco Manufacturers	308	109		417	328	181	418	927	295	146	300	741
Dealers in Tobacco and Snuff	79,603	3,889		83,492	94,538	5,743	. .	100,281	143,778	12,791	11,216	167,785
Wine Dealers, Wholesale	1,199	149		1,348	1,381	128	. .	1,509	1,770	40	180	1,990
Ditto ditto, Retail	10,164	610		10,774	10,556	844	. .	11,400	18,639	2,593	2,930	24,162

Some explanation may be necessary to account for the great number of Licences granted for carrying on the occupation of a Brewer, and which, in 1833, amounted to 44,562. The following statement, which applies to the year 1834, will sufficiently elucidate the subject, and will at the same time show the manner in which the manufacturers and sellers of beer are distributed in the different divisions of the kingdom.

	England.	Scotland.	Ireland.	United Kingdom.
Brewers	1,907	217	240	2,364
Licensed Victuallers	53,207	17,239	—	70,446
Persons Licensed for the general Sale of Beer	35,354	—	—	35,354
Victuallers who brew their own Beer	25,483	360	—	25,843
Persons Licensed for the general Sale, who brew their own Beer	14,698	—	—	14,698

The persons designated in the fourth and fifth lines of this statement are of course included among the numbers of the second and third lines, which circumstance must be borne in mind when estimating the entire number of individuals who are engaged in the production and distribution of beer. The extent to which the manufacture is carried on in the three divisions of the kingdom, by the various classes of brewers, is shown in the following table:—

Number of Bushels of Malt used for making Beer by Brewers, Licensed Victuallers, &c., in England, Scotland, and Ireland respectively, during the year 1834.

	England.	Scotland.	Ireland.	United Kingdom.
Used by Brewers	15,837,409	997,771	2,055,326	18,890,506
„ Licensed Victuallers ...	9,373,026	141,830	—	9,514,856
Used by Persons Licensed for the general Sale of Beer	3,734,288	—	—	3,734,288
	28,944,723	1,139,601	2,055,326	32,139,650

The brewers of London alone (102 in number) used more than 5,000,000 of bushels of malt in the year, while the quantity used by the two other classes of producers was but little more than 2,000,000 bushels. The manufacture of beer in England appears to absorb nine-tenths of the quantity of malt so employed in the United Kingdom. The exact proportions in the three divisions were :—

England	90.0
Scotland	3.6
Ireland	6.4
	100.

The real proportion of this beverage, consumed in England, is even greater than this, as much of the ale brewed in Scotland and of the porter made in Dublin finds its way to the London market.

The distribution of the population of France in regard to occupations offers a striking contrast to the distribution which has been shown to exist in this country. In a paper on the comparative situation of the poor in France and in England, drawn up by Monsieur Frederic Lullin de Chateauvieux, and communicated to the late Board of Commissioners for inquiring into the administration and operation of the Poor Laws in England, a statement is given in which the French population is divided into classes in the following proportions :—

Total population		32,000,000
Town population	7,000,000	
Land proprietors and their families	20,000,000	
Agricultural labourers and their families	3,000,000	
Artisans employed in Agricultural districts	2,000,000	
		32,000,000

Supposing the family of each proprietor of land to consist of five persons, France contains four millions of proprietors, who are subdivided by Monsieur de Chateauvieux as follows :—

Large Proprietors.			Hectares of Land.
1st Class . . .	42,409,	possessing	8,481,800
2d ,, . . .	51,622	,,	4,516,925
Moderate Proprietors.			
1st Class . . .	86,069	,,	4,819,864
2d ,, . . .	258,000	,,	7,388,003
Small Proprietors.			
1st Class . . .	774,621	,,	7,843,494
2d ,, . . .	2,787,112	,,	12,650,914

According to this calculation the average quantity of land held by each individual in the two classes designated as large proprietors, amounts to 138 hectares, or 340 English acres; the average quantity assigned as the possession of moderate proprietors amounts to 35½ hectares, or 88 English acres; while the land held by small proprietors, if equally divided among their whole number, would amount to no more than 5¾ hectares or 14⅕ acres for each.

In the collection of "Documents Statistiques sur la France," published in 1835 by the Minister of Commerce in Paris, the number of landed proprietors is stated to be 10,896,682, which gives only 11½ English acres as the average size of the farms in that country. This extent must, however, be far below the truth, and as there can be no doubt of the accuracy of the numbers as stated in the French official tables, it is probable that each proprietor has been reckoned distinctly for each of the several pieces of land which he holds in separate parishes or communes.

The division of the soil of France, according to the nature of its employment, is stated by M. de Chateauvieux as under:

	Hectares.		English Acres.
Total superficies . . .	53,702,871	equal to	132,646,091
Sterile and unimprovable . .	3,702,871	,,	9,146,091
Vineyards and plantations .	2,000,000	,,	4,940,000
Forests	6,842,623	,,	16,901,279
Pasture	1,157,377	,,	2,858,721
Meadow land	5,000,000	,,	12,350,000
Artificial grasses (Lucerne, &c.)	4,000,000	,,	9,880,000
Arable land	31,000,000	,,	76,570,000
	53,702,871		132,646,091

It appears from this division that in each 100 parts
4 are devoted to the production of liquids including oil,
13⅘ ,, of wood, which is chiefly used as fuel,
20⅕ ,, to the support of animals, and
62 ,, to the production of cereal grains, &c.
100

About 4,500,000 hectares (11,115,000 acres) are supposed to be held by the government and by municipal bodies.

It is estimated by Monsieur de Chateauvieux, that among the small proprietors of land in France 1,243,200 are possessed of various quantities, none of them exceeding 2 hectares (about 5 acres); an extent altogether insufficient for the support of a family consisting of the average number of five persons, since in the present state of agriculture in that country it requires 1 hectare and 23 ares of land (3 English acres) to furnish means of support for one individual. In addition to the land, each of these little properties is supposed to comprise a dwelling with a small garden in which vegetables are raised, and by including this addition to the means of the family, three-fifths of their wants are supplied. For the remaining two-fifths the individuals composing the families of these small proprietors are obliged to apply themselves to some other source, and in so far partake of the condition of labourers. In some cases, the freehold thus held is so small, that the proprietor is only distinguishable from the mere peasant by the possession of his dwelling and garden. In the wine-producing districts many of these peasant proprietors assist as vine-dressers in the cultivation of the larger properties, and in this way a family is said to add about 200 francs (8*l.*) in the season to its otherwise scanty provision. Where circumstances permit them, these labouring proprietors hire land in the vicinity of their estates and farm the whole, and it frequently happens that they let their little patches, which are insufficient for their support, to others similarly circumstanced, and hire themselves as farm servants on larger domains. A great many among the farming labourers in France are small proprietors, and we may suppose that such would naturally meet with a preference on the part of employers, who thus have an assurance of their respectability, and a security for their good conduct which can never be given to the employers of labourers in this country, where they have been too generally dependent in part for their support upon the parish pay-table. The extent to which the subdivision of land is carried in France, under the operation of the law of inheritance, is productive of so many disadvantages to the country generally, that it is well some good can be ascribed to it, which may tend, in however small a degree, to diminish its evils.

CHAPTER IV.

PAUPERISM.

Origin and progress of Poor Laws—Act 43rd Elizabeth—Amount expended at various periods for relief of Poor—Injurious tendency of the System—Means employed for its amendment—Sums expended for Poor in England and Wales in each year of the present century—Proportion of Payments to Population at each decennary enumeration—Methods followed in various countries for relieving the Poor—In Norway—In Sweden—In Denmark—In Mecklenburgh—In Prussia—In Wurtemberg—In Bavaria—In the Canton of Berne—In France—In Holland—In Belgium.—Labourers' earnings in England, &c.

THE system of compulsory maintenance for the poor, which has been in operation in England and Wales since the 43rd year of the reign of Elizabeth, has at various times afforded occasion for warmer controversy than almost any other matter affecting the internal condition of this country.

The attention of the English legislature was indeed drawn to the subject of the maintenance of the poor more than two hundred years before the period just mentioned. So early as 1388, an act was framed and passed, providing "that a convenient sum shall be paid and distributed yearly out of the fruits and profits of the several churches, by those who shall have the said churches in proper use, and by their successors, to the poor parishioners in aid of their living and sustenance for ever." Until the era of the Reformation, when so many richly-endowed religious establishments were seized by the crown and appropriated to secular uses, the poor had generally found in them a source of relief from their distresses. It would appear, however, that the claims of indigence must, even before the suppression of religious houses, have exceeded the means or the will for their relief on the part of the possessors of ecclesiastical revenues, for, by the Act 27 Henry VIII., the officers of towns are directed to collect alms for the purpose of keeping "sturdy vagabonds and valiant beggars" to continual labour. This act further directs "every preacher, parson, vicar, and curate, to exhort, move, stir, and provoke people to be liberal for the relief of the impotent, and for keeping and setting to work the said sturdy vagabonds." By another clause it was provided "that a sturdy beggar is to be whipped for the first offence, his right ear cropped for the second; and, if he again offend, to be sent to the next gaol till the quarter sessions, there to be indicted for wandering, loitering, and idleness; and, if convicted, shall suffer execution as a felon and an enemy of the commonwealth." The inundation of mendicancy which appears at this time to have overspread the country, had, in all probability, chiefly originated out of the first great breaking up of the feudal system, by the permission given in the preceding reign to the great landed proprietors to dispose of their estates,—a change which speedily occasioned the dispersion of all those numerous bands of retainers which used to be fed by every lord of the soil. This state of things could not but be aggravated by the subversion of the religious establishments in 1539, from which time, until the close of the reign of Elizabeth, many statutes were passed relative to vagrancy and mendicity.

It is to the Act 43rd of Elizabeth, however, that we owe the system which, till very recently, has provided in England and Wales for the compulsory maintenance of the poor. That the system then introduced has since been greatly abused and applied to purposes which did not enter into the contemplation of the legislature of that day cannot be doubted. The chief provisions of the Act of Elizabeth gave to the overseers of the poor power to levy upon the inhabitants of their respective parishes "such sums as should be necessary to support the aged and infirm parishioners, and for setting to work all persons using no ordinary and daily trade of life to get their living by." Confined within this limit, laws for the maintenance of the poor appear to be in agreement with the plainest principles of humanity, which enjoin upon every one the duty of relieving the undeserved distresses of his fellow-creatures. Unhappily, the fund thus directed to be employed for the necessary relief of the impotent, and for setting to work persons capable of labour, has been applied to purposes wholly opposed to the spirit, if not to the letter of that law, and that to a degree and in ways which have proved destructive to the morals of the working classes, and highly injurious to the interests of the community.

It was not until a long time after the passing of the Act of Elizabeth, that the disastrous effects just alluded to sprung out of its provisions. So recently as the reign of George II., the amount raised within the year for poor rates and county rates in England and Wales was only 730,000*l.* This was the average amount collected in the years 1748, 49, 50. In 1775, the amount was more than doubled, having been 1,720,000*l.*; of which sum rather more than one million and a half was expended for the relief of the poor. The war of American independence had then commenced, and was followed by hostilities with France, the vast public expenditure occasioned by which, crippled the resources of the people, and aggravated the distresses of the poor. From that time to the close of the last French War in 1814, the sums levied for poor rates were in a state of continued progression. The average sum expended for the relief of the poor in the three years from 1812–13, to 1814–15, amounted to 6,123,177*l.*; but this sum, enormous as it is, has since been surpassed; the average of the three years 1831, 32, and 33, was 6,875,552*l.*, and the amount expended in the single year, ending the 25th of March, 1818, was even greater than this by nearly a million, having been 7,870,801*l.* The year last mentioned was one of great hardship to the poor, in consequence of the dearness of provisions: the average price of wheat during the year 1817 having been 94*s.* 9*d.* per quarter. The increased pressure, however, was not simultaneously felt throughout the kingdom. In Berkshire, the largest amount of money for the relief of the poor was expended in 1812; in Nottinghamshire and Brecon the most expensive year was 1816; in the whole of Wales, with the exception of Brecon, Anglesea, and Carnarvon, it occurred in 1818, which was also the dearest year in Devonshire, Gloucestershire, Northamptonshire, Rutlandshire, Surrey, Warwickshire, and the East and North Ridings of Yorkshire. Cumberland, Leicestershire, and the West Riding of Yorkshire, were called upon for the heaviest contributions in 1819. Huntingdonshire expended most in 1826; Bedfordshire and Lincolnshire in 1829; Middlesex, Cambridgeshire, and Anglesea in 1831; and Carnarvon in 1832. With these exceptions, the largest expenditure was made in every county in the year already mentioned, *viz.*, between the 25th of March, 1817, and the same day in 1818.

A feeling had long prevailed, that the injurious tendency of our system of poor laws was aggravated by the mode of their administration, and inquiries of a partial nature had from time to time been undertaken by the legislature with the hope of palliating the mischief, and of finding out some method of mitigating the evils of pauperism, without abandoning the dictates of humanity. Little or no good was found to result from those inquiries. The subject was so vast, and the practical evils attending it were so widely spread and deeply seated, that it required an investigation far more laborious and minute than could be completed by any committee of Lords or members of the House of Commons who had other and pressing calls upon their attention. Under these circumstances it was perhaps the wisest plan that could be adopted by the government to appoint a Board of Commissioners who should make "a diligent and full inquiry into the practical operation of the laws for the relief of the poor, and into the manner in which those laws are administered." The Commissioners thus appointed were persons whose education, experience, and station in society, eminently qualified them for carrying on, zealously, judiciously, and effectually, the laborious task intrusted to them. The mass of information which, in a comparatively short space of time, they collected and embodied affords the best testimony that can be offered in favour of their fitness for the undertaking. The Report which was presented to the government by the Commissioners in February, 1834, has been so widely circulated, that it cannot be necessary, at this short distance of time from its delivery, to enter upon the examination of its various details, nor could it be attended with any profitable result to canvass the propriety of the various remedial measures which it proposes, and which have in great part been adopted by the legislature. It will be sufficient here to state, that the opinion before so generally held as to the desirableness of a radical change at least in the mode of administering the laws for the relief of the poor, was strengthened by means of the Report of the Commissioners into a conviction of the necessity of that change in order to arrest the rapid and total demoralization of the working classes, which was fatally counteracting all the efforts of philanthropists for enlightening the minds and improving the condition of the labouring poor. The Act "for the Amendment and better Administration of the Laws relative to the Poor in England and Wales," which received the royal assent on the 14th of August, 1834, as yet cannot be said to have come fully into operation, and it will not be possible, for some time to come, to judge dispassionately the effects of a measure which is hardly second in importance to any of the legislative reforms brought about since the commencement of the present reign.

The following table exhibits the amount of money expended for the relief of the poor in England and

Wales, the number of inhabitants, the average price of wheat, and the number of quarters of that grain for which the money so expended might have been exchanged during different years in the present century. It will be seen from this table, that in the years of dearth, in which the largest sums have been distributed to the poor, the tax for their relief, if estimated by its equivalent quantity of wheat, has borne the lightest upon the community. The money expended for the relief of the poor in 1776 amounted to 1,530,800*l.*, and might have been exchanged for 802,165 quarters of wheat; whereas, in 1801, when the amount expended exceeded that of 1776 by 162 per cent., the quantity of wheat for which it could have been exchanged was lessened by 13 per cent. The fact is, that in a year of scarcity and high prices, while even the wealthiest classes feel the pressure in the shape of increased rates, and the mass of the community in a diminution of the means of consumption, it is a natural consequence that the paupers also should bear their share of the general inconvenience, and should, as well as those by whom they are supported, consume less food than in ordinary years. It must, too, be borne in mind that bread absorbs only a part, although certainly a considerable part, of the poor man's expenditure, and that the remaining articles required for his sustenance are not, equally with grain, affected in price by a deficient harvest.

Years.	Sums expended for Relief of the Poor.	Population of England and Wales*.	Average price of Wheat per Quarter.		Number of qrs. of Wheat for which the money could have been exchanged.
	£.		s.	d.	
1801	4,017,871	8,872,980	115	11	693,234
1803	4,077,891	9,148,314	57	1	1,428,751
1811	6,656,105	10,163,676	92	5	1,440,455
1814	6,294,581	10,775,034	72	1	1,746,474
1815	5,418,846	10,979,437	63	8	1,702,255
1816	5,724,839	11,160,557	76	2	1,503,240
1817	6,910,925	11,349,750	94	0	1,470,409
1818	7,870,801	11,524,389	83	8	1,881,466
1819	7,516,704	11,700,965	72	3	2,080,748
1820	7,330,256	11,893,155	65	10	2,226,913
1821	6,959,249	11,978,875	54	5	2,557,763
1822	6,358,702	12,313,810	43	3	2,940,440
1823	5,772,958	12,508,956	51	9	2,231,094
1824	5,736,898	12,699,098	62	0	1,850,612
1825	5,786,989	12,881,906	66	6	1,740,447
1826	5,928,501	13,056,931	56	11	2,083,221
1827	6,441,088	13,242,019	56	9	2,269,987
1828	6,298,000	13,441,913	60	5	2,084,855
1829	6,332,410	13,620,701	66	3	1,911,671
1830	6,829,042	13,811,467	64	3	2,125,772
1831	6,798,888	13,897,187	66	4	2,049,916
1832	7,036,968	14,105,645	58	8	2,398,966
1833	6,790,799	14,317,229	52	11	2,566,601
1834	6,317,255	14,531,957	46	2	2,736,717

* The numbers given in this column for the years 1801, 1811, 1821, and 1831 are those ascertained at the enumerations of those years: those stated for the intermediate and for subsequent years are computed from the baptisms and burials, and from the rate of increase, as ascertained at each census.

If viewed as a question of money expenditure only, it will not be found that the sums raised for the relief of the poor bear more heavily upon the people now than at the beginning of the present century. If the whole sum collected for that purpose in each of the years when the enumerations of the population have been made be divided in equal proportions among all the inhabitants of England and Wales, it will be found that the payments were—

	s.	d.	
In 1801	9	1	for each.
1811	13	1	,,
1821	10	7	,,
1831	9	9	,,

The increase observable between the first and the last of these periods, amounting to 7⅓ per cent., is assuredly more than made up by the increased amount of capital in the country. The greater increase between 1801 and 1811 is more apparent than real. If allowance be made for the difference in the value of the currency—the price of gold having been 4*l.* 16*s.* per ounce in 1811—it will be found that the proportion for that year was equivalent to 10*s.* 8*d.* for each person, measured in currency of the standard value.

It is not asserted, however, that because the proportional sum thus expended has increased in so small a degree, therefore pauperism has not made a greater advance in 30 years than 7⅓ per cent. Owing to the operations of the war and a succession of deficient harvests, the prices of almost all the articles required for the support of life were, at the beginning of this century, driven up to a distressing height, which state of things continued through the remaining period of the war, and for one or two years beyond its termination. Since then, the fall that has occurred in the prices of all the articles comprising the poor man's expenditure has been so great, that we may fairly estimate it to be fully equal to the simultaneous fall in the price of grain, so that the sum of 9*s.* 9*d.* in 1831 would have purchased as much as 17*s.* would have bought in 1801. Applying this test, we shall find that the weight of pauper expenditure, in proportion to the population at the two periods, was as 7 in 1831 to 4 in 1801.

Need more be said to show the necessity that had arisen for grappling with an evil of such enormous and constantly increasing magnitude?—an evil, the tendency of which has been to set against each other different classes of the community, to dry up the sources and to blunt the feelings of benevolence on the part of those who are made to contribute, while it has engendered dispositions of recklessness and idleness among those who have received support. Shall we be wrong in ascribing to those compulsory contributions, administered as the law has been, a quality the very reverse of that ascribed by our immortal bard to mercy

> ——————— "it is twice blessed,
> It blesseth him that gives, and him that takes?"

It is a common error to suppose that the institution of Poor Laws is peculiar to England. Monsieur de Chateauvieux, whose "*Recherches sur la situation comparative des Pauvres en France et en Angleterre,*" is contained in the appendix (F) to the Report of the Commissioners on the Poor Laws, remarks on this head, that "the existence of a tax in favour of the poor under one form or another, may be recognised in almost every fully-peopled country;" and he instances, in support of this position, the distribution of wheat in consular Rome; and, in more recent times, the alms enjoined by the Christian religion; the bequests made to the clergy by persons in order to ease their consciences, and which bequests were very commonly declared by the donors to be intended for distribution among the poor; the hospitals and infirmaries endowed at the period of the crusades, and the institutions at a still later period for the maintenance of foundlings and for supporting and educating the children of the poor.

The instances here cited are, however, widely different in their character from the English Poor Laws, either as regards their original object or their modern mode of administration. Whatever sums were given or bequeathed under the different forms mentioned by Mons. De Chateauvieux were voluntary offerings, sometimes the fruit of compunctious visitings, but more frequently the offspring of benevolent feelings, and the objects designated for relief do not in any case appear to have been healthy able-bodied labourers, or their families.

Instead of endeavouring to institute any comparison between conditions of society so dissimilar to our own as those here referred to, it will be more profitable to state briefly the methods at present employed in various civilized communities for the relief of their distressed poor, and to point out, as well as our limited means of information permit, the apparent effect of those methods upon the population of the different countries.

We learn from returns transmitted by English consuls, in consequence of inquiries made through Lord Palmerston by the Poor Law Commissioners, that in the following countries of Europe the poor are acknowledged to possess a legal claim to relief from the rest of the community, viz., Norway, Sweden, Russia, Denmark, Mecklenburg, Prussia, Wurtemberg, Bavaria, and the Canton of Berne.

In Norway relief is furnished to the "impotent through age, cripples, and others who cannot subsist themselves, and who, in the country districts, are billeted or quartered on such of the inhabitants (house and landholders in the parish) as have the means of providing for them. By them these distressed objects are furnished with clothing and food, and they are in return expected to perform such light services as they can. In the distribution respect is had to the extent or value of the different farms and to the number of the indigent, which varies greatly in different parishes. In some they have so few poor, that only one pauper falls to the lot of five or six farmers, who then take him in rotation, whilst in other parishes they have a pauper quartered on every farm or estate all the year round, and on the larger ones several." The wages of artisans vary from 5*s*. 4*d*. to 7*s*. 2*d*. per week, and of agricultural labourers from 3*d*. to 5½*d*. per day; in the former case, food, lodging, and tools, and in the latter case, food only being supplied by the employers. In ordinary cases, families can subsist upon their earnings. They consume very simple food, salt herrings, oatmeal porridge, potatoes, and coarse oatmeal bread, forming the greatest part of their diet; once or twice in the week they may obtain a piece of bacon or salt meat, and those who live on the coast, or near to rivers and lakes, procure fresh fish. Corn-brandy is in general use.

Every parish in Sweden is bound, as in England, to support its own poor, but the fund for that purpose is supplied by voluntary contributions, (a large portion of which is made up of legacies and endowments,) by the produce of certain fines and penalties, and by rates levied on the inhabitants in proportion to their means of contributing. Mons. De Hartsmandorf, the Secretary of State for ecclesiastical affairs, has stated that the number of persons who received relief in 1829 was 63,348, out of a population of 2,780,132, or about 1 in 42. Colonel Forsell, on the other hand, affirms that in 1825 the number relieved amounted to 544,064, or about 1 in 5. Considering that in the city of Stockholm alone there are 83 separate and independent boards for affording relief to the poor, the estimate of Colonel Forsell appears the more probable of the two. The law is severe against able-bodied men who seek relief, and who, if they are without property and employment, and neglect to provide themselves with any, or to obtain sureties for the payment of their taxes, are denominated unprotected. Such persons are placed almost at the disposal of the police, who allow them a fixed period in which to obtain employment. If they fail in this object they are made to labour on public works.

It appears that under the existing system pauperism has increased in Sweden in a greater ratio than the population, and it is feared that the moral effect produced upon the labouring class by the existence of a fund upon which they have a legal claim has occasioned, although not in an equal degree, many of those evils which the same system has brought about in England. The daily wages of artisans are 1*s*. 7*d*., and of skilled agricultural labourers 7*d*. or 8*d*., while the unskilled obtain no more than 3*d*. or 4*d*. Families can subsist upon their earnings. Agriculturists in the southern provinces live upon salt fish and potatoes; in the northern provinces porridge and rye-bread form their food. Artisans sometimes are able to procure a little meat. The annual expenditure in the family of a small farmer is stated by Mr. Liddell, the English Consul at Gottenburg, at 10*l*. 18*s*. 10*d*. In an agricultural family the disbursements are about two-thirds of this amount.

The social condition of Russia, where the great bulk of the people are kept in a state of slavery by the owners of the soil, is so little analogous to that of England, that it would throw but little light upon our subject to explain the regulations enforced in that country for the maintenance of the poor.

In Denmark each Kiöbstæd, or market town, (of which there are 65 in the kingdom,) and each parish in the country, forms a district for the management of its own poor. All persons are considered entitled to relief "who are unable with their own labour to earn the means of subsistence, and thus, without the help of others, would be deprived of the absolute necessaries of life."

The persons to whom relief is given are divided into three classes: first, aged, sick and infirm persons; second, orphans, foundlings, deserted children, and the children of parents who are unable to support them; third, families or single persons who are unable to earn a sufficiency for the support of themselves or their children.

Paupers of the first class are provided with food, lodging, clothing, and medical attendance, either in private dwellings or in establishments belonging to the parishes. Children are placed in private families, where they are brought up and educated at the expense of the parish until they can be apprenticed or otherwise placed out in life. Paupers of the third class are so relieved that they may not be without the absolute necessaries of life, but they are compelled to work to the best of their ability for their maintenance. It is part of the duty of those by whom the system is administered to find work for the poor at the usual rate of wages; where the amount earned is insufficient, assistance is afforded, not in money, but in articles of food and clothing.

The Danish law has established the principle, that every person receiving relief under the Poor Laws is bound, either with his property or his labour, to refund the amount disbursed for him. On relief being afforded to a pauper, an inventory and appraisement of his effects are made, and these are delivered over to him for his use after having been marked with a stamp; any person who receives goods so marked, either by way of purchase or pledge, must restore them or pay their value, and is besides subject to fine. The parish has also a claim upon property acquired subsequent to the granting of relief, and is the legal heir to the effects of every one for whom it is under advances. Whenever a person refuses to pay his debt to the parish by instalments, he may be compelled to work for the benefit of the same, and if he attempts to leave the parish he is imprisoned. The amount of these instalments is awarded, in proportion to the means of the pauper, by commissioners. Begging is prohibited, and when committed is punished by imprisonment.

The money required for relieving paupers is contributed to a parochial fund by householders, landowners, tradesmen, and even by servants and labouring mechanics, in short by all persons who are not themselves receiving parish aid, and who can contrive to pay anything without depriving themselves of the necessaries of life.

The introduction of this system into Denmark is of recent date; it did not come into operation until 1803. The means, therefore, are in our hands for drawing a comparison between the condition of the poor and of the country generally as affected by poor-laws, and that condition as it existed previous to their adoption.

It is stated, that before the introduction of the present Poor Law system, distress among the poor was much greater than it has been since, and that begging, which is now prevented, was then quite common throughout the country, and was carried on in the most rapacious and importunate form, so as to amount to a heavy exaction on the peasantry as well as a most intolerable annoyance;

for "the beggars, when their demands were not satisfied, had recourse to insolence and threats, nay, even to acts of criminal vengeance. This is no longer the case, and in so far, therefore, the present system has been beneficial." Mr. Browne, our Secretary of Legation at the Court of Copenhagen, gives, however, a not very satisfactory account of the working of the system, and states that it has produced a most injurious effect upon the industry of the people; that it has lowered the middle men to be poor men, and that it has converted the labouring poor into paupers. "It tends," says Mr. Browne, "to harden the heart of the poor man, who demands with all that authority with which the legal right to provision invests him. There is no thankfulness for what is gotten, and what is given is afforded with dislike and reluctance." Among the disadvantages attendant upon the system of compulsory relief, Mr. Browne mentions the weakening of principles of frugality, the encouragement of early and thoughtless marriages; the bringing up of children with examples of indolence and inactivity continually before their eyes, and the weakening of the natural dependence and affection of parent, children, and other relatives. "The child feels his parent comparatively needless to him, he obtains support elsewhere, and the parent feels the obligation to support his child greatly diminished. In short, being comparatively independent of each other, the affections must inevitably become blunted."

A man, with a wife and four children, who work every day of the week, including Sunday, earn among them about twelve shillings sterling per week. The principal food of the labouring people is rye-bread, groats, potatoes, coffee, butter, cheese, and milk; provisions are cheap, and, with prudence and economy, the earnings of a family are sufficient for their subsistence.

In Mecklenburg, also, every pauper has a legal claim to assistance. The old and impotent are provided with food, lodging, and fuel, and able-bodied persons can claim to have work and a dwelling provided for them. Every inhabitant able to do so is obliged to pay poor-rates. In towns, the subscriptions are called voluntary, but if these should fall short of what the overseers consider proper, they can demand more: the overseers are appointed by the magistrates. The wages of artisans vary from seven shillings to ten shillings and sixpence per week in towns, and are about a third less in the country. In addition to money-wages, working men are boarded and lodged by their employers. Labourers in the country are paid three shillings and sixpence per week, and have found for them a dwelling with a garden, pasture for a cow and two sheep in summer, and provender for them in winter. With these advantages, they are enabled to procure a sufficiency of good sound food, and occasionally to indulge in the use of meat, which falls to the lot of the working classes in very few of the countries on the continent of Europe.

In Prussia, the law prescribes that every town and every village community must support its own members when in distress, provided there are no relations able to do so. The owners of estates are under a similar obligation; so that the sick, and those who are impotent through age, have all their absolute wants satisfied. Each town and village is governed by its own particular laws and customs, with regard to the management of the poor. The only point in which all these communities can be said to agree, is in the appointment of a body called the *armendirection*, or society for the poor, who undertake the collection and distribution of the funds, and of the different sub-committees to whom, under the armendirection, the care of the poor is confided. The sub-committees are formed of burghers chosen from different districts called *armenbezirke*, into which the town is divided for that purpose.

The necessary funds are obtained principally by means of donations and private charity. Every householder, every inhabitant of a floor, or of a single room, is visited for the purpose of obtaining subscriptions by the sub-committees. These donations are collected monthly, and their amount depends entirely upon the means and disposition of the donor. No rate or fixed table exists by which the sum to be given is regulated. There is not any law in Prussia which authorises the compulsory raising of funds for the maintenance of the poor, but when the offerings of private charity are insufficient for the purpose, the general government advances money from funds destined to other purposes, such as paving, lighting, or the construction of roads.

The particular circumstances of every one applying for relief being almost necessarily known to some of the members of the sub-committee of the district in which the applicant must be resident, false or fraudulent applications are easily detected; every one is examined by a medical man, with respect to his bodily and mental ability to maintain himself, and in cases where this ability exists, the applicant is required by the police to work. Failing to comply with this demand, he is sent to the poor workhouse of the province, where he is compelled to be industrious, and is taught to earn a livelihood. Each province in Prussia contains one of these workhouses, in which paupers are employed at various kinds of work and service, according to what each is capable of performing. The statements given in the appendix to the Report of the Poor Law Commissioners, relative to the effects of the institutions that have been described, are not in strict agreement with one another; it appears, however, to be pretty well established, "that the pauper possesses a legal right to assistance, although that right is seldom enforced, because the impotent are voluntarily provided for, and the able-bodied would probably be sent to a penal workhouse."

The kingdom of Wurtemberg is among those countries whose inhabitants possess a legal claim to be provided with the necessaries of life from the general funds of the community. The population is divided into the two classes of burghers and settled non-freemen, or *beisitzers*, in the proportions of about nine-tenths of the former, and one-tenth of the latter. Burghers become so by inheritance or by purchase, and enjoy the right of participating in the revenues of property, held by the particular district, or parish, to which they belong. Persons may become beisitzers by payment of a smaller sum than is required to obtain *burgerrecht*, but they do not by that means acquire any interest in the property just alluded to. Every person, however, who cannot obtain the necessaries of life from his property, his labour, or his trade, nor through the assistance of relations, has a claim for support on the parish in which he has the rights of a burgher or a beisitzer. If a man is too poor to purchase the right of a beisitzer, he is assigned as such by the police to some parish, without payment of any fine of admission. The care of the poor is carried by the government to such an extent, that if in times of scarcity any person should perish through the neglect of the overseers, the officers guilty of that neglect would be prosecuted with all the rigour of the law.

"A large proportion of the parishes throughout the kingdom possess a fund called *pium corpus*, arising partly from voluntary contributions and other casual receipts, but principally from funds which, before the reformation, had been employed for the purposes of the Roman Catholic worship, and instead of being confiscated by the government, as was the case in England, were directed to be employed for charitable purposes. In the year 1817, and during the dearth that prevailed at that time, an old law which had fallen into desuetude was revived, according to which the opulent who, after having been applied to for voluntary contributions, should not come forward in a manner suitable to their property, are to be taxed by the magistrates in a sum conformable to their income, and according to all the circumstances of their situation."

Able-bodied persons who claim support from the public funds are compelled to work for moderate wages. It is sometimes difficult to find employment for the poor, on which account there are in the capital and some other places public establishments for employing them in spinning and similar work. In most of the towns there are poor-houses into which aged and infirm people are received, and where such places of refuge are not provided, the poor are received at all the houses in the town in turn, or else are put out to board permanently at some private house, the cost of their maintenance being defrayed out of the local funds.

The statement from which the foregoing particulars have been derived was drawn up by order of the Wurtemberg government in 1834, at the request of the English minister. At the conclusion of this statement we find the following remarks, which seem to favour the opinion that the evils which have been experienced in this country are inseparable from the system of establishing a legal claim for relief on the part of the able-bodied poor.

"If we now compare the situation of one of the poorest of the Wurtemberg poor who support themselves independently by their labour, with that of one of the more favoured among the Wurtemberg poor who lives by public charity, for instance the inmate of a hospital and even of a prison, it might certainly appear that the condition of the latter is preferable to that of the former.

"In fact, we often see such hospital inmates, and even prisoners, attain the most advanced age, while many a poor day-labourer and artisan sinks at a much earlier age under the weight of his cares and the want of necessaries. Many an inmate of a hospital and many a prisoner, even with bodily infirmities and sufferings, still seems to find his condition quite comfortable, and shows himself thankful for the good he enjoys, while many a day-labourer or artisan, in the enjoyment of good bodily health, feels himself miserable and curses his existence; in fact, many a one seeks admission into the hospital who would be very well able to provide himself with necessaries by his work at home. The man often separates from his wife, or the wife from her husband or from the children to be received into the hospital. Many a one does not economise, but squanders what he has, and does not work in order to earn something, because he thinks that he always has the right of being received into the hospital as a last resource. In many places, where there are rich hospitals and other foundations, the number of the poor is proportionally greater than in places where less is done for their support; many a one continues to beg and to steal who has already been frequently imprisoned for these offences, because he finds his situation in the workhouse very tolerable in comparison with the laborious life of a poor man at liberty.

The wages of artisans are in towns from 1 to 2½ florins (1*s.* 8*d.* to 4*s.* 2*d.*), and in the country from ⅓ of a florin to 1 florin (6⅔*d.* to 1*s.* 8*d.*) per week in addition to food and lodging. Labourers, who are likewise most commonly fed and lodged by their employers, receive in towns from 50 to 60 florins (4*l.* 3*s.* 4*d.* to 5*l.*) and in villages from 20 to 40 florins (1*l.* 13*s.* 4*d.* to 3*l.* 6*s.* 8*d.*) per annum. When they provide themselves with food and lodging, they receive 150 florins (12*l.* 10*s.*) per annum, in addition to which they are furnished with food and fuel in the winter under the market price. The wife and children may earn from 40 to 50 florins more. With these means they can provide a sufficiency of wholesome food, including meat once or twice in the week.

Every town and village in Bavaria must have an institution for the relief of the poor, with this exception, that if several neighbouring villages join to support one establishment for that purpose in common, every encouragement is given to them for that end. All the inhabitants are bound to contribute to the support of the poor in their district according to their ability; every one is also bound in the same manner to support his poor relations.

The aged and helpless poor are provided for in *houses of nourishment*. Other paupers, who are incapable of working, but who yet do not require any extraordinary care, obtain relief in money, which, however, is not given without complete proof of want being brought forward; the amount is made to depend upon the price of provisions. The able-bodied paupers are maintained in buildings which are strictly workhouses; bad conduct and idleness on their part are punished by the magistrates. Marriage is not allowed between people without capital, unless with the previous permission of those who manage the poor institution of the district. Clergymen who marry such people without that permission are liable for their maintenance in case of their becoming chargeable. This restriction is assigned as one great cause of the want of any excess of population in Bavaria, and of the general absence of extreme poverty and misery in that country.

Labourers are paid at the rate of 8*d.* per day in the country, and from 8*d.* to 1*s.* 4*d.* in the towns.

The Canton of Berne is the only other community in Europe in which the inhabitants have a legal claim to support when in poverty. So early as the 17th century, it there became the law, that every one was entitled to receive such support out of the public property of the commune to which he belonged, and if this property should fall short of the required amount, then from the landed proprietors of the commune, as well as from contributions levied upon the possessors of personal property.

The abuses which have grown up under this system are numerous and serious. Vagabondage, improvidence, imprudent marriages, and the illicit commerce of the sexes, have all been favoured by the prospect which the people have of being able to devolve the consequences of these delinquencies upon others. All means of obtaining instruction in general knowledge, and of acquiring any useful art, have been neglected; the physical and intellectual faculties of the people have been deadened, and their sense of honest pride has been so blunted, that no one blushes at being known to live upon the public benevolence. Experience has clearly shown that the number of poor has increased in proportion as the number and amount of the resources for their relief have been multiplied, and that in those communes which possess the largest revenues applicable to that purpose, the population is the most backward, and the least industrious. In the answer given to the queries of our Poor Law Commissioners by the government of the Canton, we find it stated that "numerous examples might be cited where whole families have lived in dependence upon the commune from year to year, and even from generation to generation, and who have found in that resource their means of existence, while examples of a contrary nature are extremely rare."

At the period of the Revolution, the clergy of France were possessed of property valued at upwards of two hundred millions sterling, which was confiscated by the government, and sold for the benefit of the state. Out of the revenues derived from this property much had been devoted to uses of charity. The numerous charitable institutions which, at the period alluded to, existed in every part of France, for the relief of the sick and infirm, and for the support of foundlings, survived in great part the social disorders of the Revolution, and in some cases have since received augmentation. In the present day, the municipal councils of all the towns in France, whose population exceeds 20,000, and of some where the number of inhabitants is smaller, set apart for the relief of the poor certain proportions of the town revenues, which are devoted to the support of hospitals, or placed at the disposal of charitable associations,—*Bureaux de Bienfaisance*. The revenues out of which these sums are assigned are, in very small part, derived from property actually possessed by the towns, the greater proportion, and in many cases the whole, being the produce of "octroi" duties, which are levied upon all articles of provision brought into the towns for consumption. It is, therefore, only in form that this tax differs from the assessments for the support of the poor in England, the sole difference being, that with us the rates form a direct tax, while in France they are collected indirectly, and, therefore, with less regard to economy. Asylums for beggars, and workhouses, are supported in France at the expense of the state, but those institutions can hardly be considered as belonging to the subject under examination, being used chiefly as places of correction for the idle and dissolute, under the direction of the police.

In the volume of "Documents Statistiques sur la France," recently published under the authority of M. Duchâtel, the Minister of Commerce in that country, it is stated that the sums devoted to charitable purposes, and for the support of foundling hospitals, in the chief towns of France, amounted in 1833 to 10,573,043 francs (422,921*l.*). The sums expended in the same year in the Bureaux de Bienfaisance, in the different departments, amounted to 8,956,036 francs (358,241*l.*), and the number of persons among whom this sum was distributed in their own dwellings was 695,932. The revenues of the different hospitals and alms-houses in France are likewise stated to have amounted, in 1833, to 51,222,063 francs (2,048,882*l.*), and the expenditure to 48,842,097 francs (1,953,683*l.*). The number of distressed persons admitted during the year into these establishments was 425,049. The number remaining at the beginning of the year having been 154,253, and at its close 152,830, we may conclude that the inmates to be found in these institutions can seldom be much if at all below 150,000.

It appears that by far the greater part of the funds raised for charitable purposes is disbursed in the towns. The total amount of money thus raised in 1833, in the different departments, was 14,560,183 francs (582,407*l.*), of which sum nearly three-fourths were, as we have seen, appropriated to the poor in the principal towns, the population of which is to the rural population in the proportion of 7 to 25. According to Mons. de Chateauvieux, the greater part of the money raised in the departments for the maintenance of the poor, and which is not disbursed in the large towns, is applied in the small towns and villages to the support of lunatic asylums and foundling hospitals. With this partial exception, France is without any public provision for the relief of its rural poor, and it becomes, therefore, highly interesting to inquire in what manner so large a number of our fellow-creatures are enabled to meet the ills and accidents of life.

In order to pursue this inquiry to any satisfactory result, it is necessary to explain the peculiar circumstances in which the agricultural population is placed by the operation of the law which ordains the division of landed property among all the children of the family. In the "Documents Statistiques" of the French government it is stated that the total number of proprietors throughout the kingdom is 10,896,682, giving an average of about 4½ hectares, or 11¼ English acres for each proprietor. But there is reason for supposing that the number thus given is greatly exaggerated by the custom of registering proprietors for each separate commune in which they possess property, by which means the same person may be reckoned several times over. It is besides obvious that, as the soil is not equally distributed among the whole body of proprietors, and some of them are in possession of estates of considerable extent, many others must have even less than the small share which would result from its equal division. In fact, it will be found that the great majority are unable to draw from their possessions sufficient for the subsistence of their families. Hence it arises that a very large proportion of proprietors let their land,

and hire themselves as farm-servants to others, or follow some trade or handicraft in the towns. It is also common among the families of these peasant proprietors, that on the death of a father leaving several children, among whom the law provides for the equal distribution of the land, an arrangement is made, under which, although the whole number are registered as proprietors, which it is their pride to be, the management of the property is left in the hands of one, by whom a pecuniary allowance is made to the rest according to the circumstances of the case.

These cases occur to so great an extent throughout the kingdom, that it is probable Mons. de Chateauvieux is correct in the opinion expressed by him in the paper so often quoted, that the number of proprietors in the actual possession and administration of the soil does not exceed four millions, representing with their families a population of twenty millions, and that of this number of proprietors, about five-sixteenths (1,243,200), representing a population of 6,216,000 individuals, are owners of small parcels of land, not any one of which is of greater extent than two *hectares* (5 acres). A farm of this extent is wholly inadequate to the support of a family, and it is more than probable, that if France had adopted a system of poor-laws similar to those lately in force in this country, these proprietors would speedily have sunk into the rank of paupers. The means by which, in the absence of such a system, they have been and are enabled to struggle through life, are thus described by M. de Chateauvieux:—"The same village includes proprietors of different grades, and in different social positions. This difference is observable between next-door neighbours, and often between those even who dwell under the same roof. The proprietor of 10 *hectares* is the friend, the brother-in-law, the uncle, or the nephew of one who possesses only two.

The day-labourer lodges with the opulent cultivator by whom he is employed, and the necessity which thus arises throughout the country for mixing and communicating with each other brings about a connexion between them. Under these circumstances, the wife of the proprietor of 20 hectares will not leave her poor neighbour without help at her lying-in; her trunks being well provided with linen, she will lend it; her saucepan is well filled, and she will provide her poor neighbour with broth, she will give potatoes to her children, and even bread if they are without it. These helps, distributed in quantities which escape statistical remark, and throughout all the rural districts of France, are not given in the form of charity, but as signs of good neighbourhood: they never take the form of money, but only of articles needed at the moment. Those who have been the objects of these good offices, return them to the donors in kind and according to what they possess, that is, with their labour and their good will. If a proprietor stands in need of assistance, either for removing a large piece of timber, or to house his sheaves, when the storm threatens, in a moment the shoemaker and the saddler quit their shops, and all run to place their exertions at the disposal of the farmer, who, by this means, stores his harvest in safety, a glass of cider sufficing as payment for the service.

"It must not be forgotten, that even the smallest proprietors have each a home which is their own; that their bit of land, however limited, will always produce some fruits and vegetables for the family use; that they can generally keep a goat, and very frequently rear a few vines, possessing, in fact, as much which is their own property, as the peasant in Ireland can only procure for a rent of five guineas. Notwithstanding the breaches which the Revolution has made in the property of the communes, many of these still possess woods and commons, which are devoted to the use of the inhabitants.

"It is a very general custom throughout France, to give day-labourers small plots of ground to cultivate with green crops, on the condition of yielding half the produce to the proprietors, the expenses of cultivation, with the exception of the labour, being contributed in equal proportions. The plan most usually adopted is to give up the land in the winter to the labourers, under the condition of its being restored in the beginning of October in a condition to be sown with corn. The advantage of the proprietor in this practice is, that, sacrificing half a crop, he, without any trouble to himself, receives his land carefully cleaned, and weeded, ready for employment."

This system doubtless has its advantages, and it is not among the least of them, that it enables the poorer classes of the rural population to struggle through existence without the kind and degree of help which is afforded by the Poor Law system of England. These advantages are, however, accompanied by the very serious drawback, that they tend to make and to keep the people poor. In this country, during the last half century, we have seen a totally different plan pursued; the number of smaller proprietors is every where greatly lessened, and in some places they have entirely disappeared; the yeoman, if he has not by prudence and industry been enabled to advance his position in society, has sunk into the labourer, and the labourer has too frequently degenerated into the pauper; still it cannot be doubted that, by thus throwing together several small holdings, and administering them as one property, the productiveness of the land has been increased, and the expense of its cultivation lessened.

Independently of the constant tendency of the law in France to subdivide the land into minute portions, there appears to be another powerful cause working to the same end in the disposition and desires of the people. This fact is rendered strikingly apparent by the following replies given by Mr. Scott, the British Consul at Bordeaux, to the queries circulated at the instance of the Poor Law Commissioners:—

"What, in the whole, might an average labourer, obtaining an average amount of employment, both in day-work and in piece-work, expect to earn in a year, including harvest-work, and the value of all his advantages and means of living?—A common labourer alone earns yearly, all advantages included, 540 francs (21*l.* 12*s.*). Owing to the scarcity of labourers, no distinction as to wages is made between an able-bodied and a common labourer.—What, in the whole, might a labourer's wife and four children, aged 14, 11, 8, and 5 years respectively, (the eldest a boy) expect to earn in a year, obtaining, as in the former case, an average amount of employment?—A labourer's wife and four children can earn by labour about 300 francs (12*l.*) per annum, viz.—

	Francs.	£.	s.
The wife	120	4	16
Eldest boy	80	3	4
Child 11 years old	50	2	0
Child 8 ,,	30	1	4
Child 5 ,,	20	0	16
	300	12	0

"Could such a family subsist on the aggregate earnings of the father, mother, and children; and if so, on what food?—Certainly. The food varies in different districts. Throughout the district called *Landes* (heath), occupying about one-third of this department, the food consists in rye-bread, soup made of millet, cakes made of Indian corn, now and then some salt provisions and vegetables, rarely, if ever, butcher's meat: their drink, water, which for the most part is stagnant. In the other parts of the department the peasantry live better. They eat wheaten bread, soup made with vegetables and a little grease or lard, twice a day, potatoes and other vegetables, but seldom butcher's meat; their drink is wine or piquette.

"Could it lay by anything, and how much?—It is certain, that a family composed as above, could lay something by from their gains at the end of the year, as the wants of the lower classes are much fewer than in England; in fact, the luxuries of tea, &c., are quite unknown. For the causes above alluded to, (extreme carelessness and absence of frugality,) few of the peasants have any surplus at the end of the year; on the contrary, they are mostly in debt. The few exceptions may, with proper care, have 6*l.* to 8*l.* in advance: this is generally employed in the purchase of a bit of land."

Those among the labouring population of England who have been able through industry and frugality to save something out of their earnings have a readier and, as regards the community, a far better opportunity for the profitable employment of their money than is offered by the "purchase of a bit of land." The Savings Banks, which are always open to take the smallest sums, whenever they can be spared, and to make a moderate, but certain return of interest on the deposits, offer a much greater incentive to prudence than would generally be found in the desire of acquiring a rood of ground; besides which, the laws which regulate the transfer and possession of real property in this kingdom are so complex in their operation, and surrounded by so many difficulties, that it would be quite incompatible with prudence for any poor man to venture upon so uncertain a speculation as the validity of a title, if even the expensiveness of the deeds rendered such a course possible to him. The Savings Bank, on the contrary, can never involve those who there deposit their savings in any risk or expense; the safety of the money is guaranteed by the state: so long as the money continues in deposit it produces revenue to the owner, unaccompanied by any contingencies of seasons; and at any moment, when the amount, or any part of it, is required to meet any extraordinary exigency, it is forthcoming, without being subject to any charge for management, or to deduction of any kind whatever. The degree in which the labouring classes in this country are willing to avail themselves of this institution is shown by the fact that on the 20th November, 1834, out of 499,207 depositors in England and Ireland, the large proportion of 260,363 had made deposits under 20*l*. The greater part must indeed have been depositors of very small sums, since the amount, if equally divided among the number just mentioned, would average no more than 7*l*. 1*s*. 1*d*. for each. The regulations under which Savings Banks are placed limit to 200*l*. the amount that can be deposited by any one individual; and, in fact, 93 out of every 100 depositors are entitled to balances under 100*l*., the aggregate sum of their savings forming more than two-thirds of the deposits invested. The great number of these small depositors, and their rapid increase, forms one of the best features in the apparent state and prospects of the labouring classes in this country. The progress of deposits in Savings Banks, both generally and in respect to this class of depositors, during the last five years, has been as follows:—

Year ending 20th Nov.	Total Number of Depositors.	Total Amount of Deposits.	Number of Depositors under £20.	Amount of Deposits under £20.
		£.		£.
1830	412,217	13,507,565	210,247	1,509,820
1831	429,503	13,719,495	222,620	1,634,568
1832	433,679	13,597,883	223,676	1,593,588
1833	462,792	14,337,521	242,015	1,718,204
1834	499,207	15,369,844	260,363	1,841,755

The following statement of the regulations adopted, and now enforced, in Holland, relative to the support of the poor, is derived from an official paper drawn up towards the close of the year 1833, by order of the Minister of the Interior at the Hague, and communicated to the British minister at that court.

At the time of the incorporation of the Netherlands with the French empire, the laws of France, including those relating to charitable institutions and hospitals, were declared to be in force in the Dutch departments, but they were only partially adopted; and on the separation of the Netherlands from France in 1814, a royal decree was made, replacing the French laws by others more in accordance with the ancient institutions of the country. The following sketch exhibits the principal features of this system, as it exists at the present time.

The principle invariably acted upon is that of making the charge of the poor rest, in the first place, upon the different religious sects to which they belong in each parish. When the means possessed by the different congregations are insufficient for this purpose, the poor may apply for assistance to the local civil authorities, by whom relief is generally afforded, if, after due investigation, the parties applying are found deserving objects. In several cities and parishes, a separate administration, responsible to the municipal authorities, is established for that portion of the poor who are not members of any religious sect; in other towns and parishes relief is afforded either by the burgomaster or by an overseer of the poor nominated by that functionary.

The hospitals and orphan-houses are, for the greater part, government establishments. Some few are maintained either wholly or in part by their own revenues. All are admitted inmates of these establishments without distinction as to religion. Foundlings and abandoned children are maintained at the expense of the place wherein they are abandoned. There are three local workhouses: one at Amsterdam, one at Middleburgh, and one in the commonalty Nieuwe Pekel A, in the province of Groningen, in which paupers are received on their application, and upon condition of their contributing as much as possible by their labour to their own support. There are further, in various places, twenty-one charitable houses of industry, where work is procured for paupers who are in immediate want. Besides these institutions, there are various other places supported by societies for affording relief in certain specified cases; some for granting assistance to lying-in women, some for distributing provisions and fuel in winter, and some for the relief of the very indigent.

The local authorities, in all cases, exercise control over the receipts and disbursements of charitable unions and establishments, the officers of which are bound to give in an annual statement to the government, in order to its presenting a report on the subject of the poor to the States General.

The annual average receipts of the established charity houses and hospitals, in the twelve years from 1820 to 1831, were 6,014,818 guilders, or 501,234*l.* 16*s.* The average number of persons who had received relief, in each of those twelve years, was 241,513. Pauperism appears to be on the increase in Holland. The average number of persons relieved in the six years from 1820 to 1825, was 218,159; in the following six years it was 264,868, being an addition of more than 20 per cent.; in 1831, the last year of the series, the number was 279,730, being an increase of nearly 30 per cent. upon the average of the earlier years, and of nearly 40 per cent. upon the number of particular years during that period. The proportion borne by the people relieved to the remaining part of the population, was 9.22 per cent. in 1822, or rather more than 1 in 11; the proportion in 1831 amounted to 11.40 per cent., or rather more than 1 in 9, which exceeds the present proportion in England.

The "Poor Colonies" of Holland, which a few years ago excited great interest in every part of Europe, owed their rise to a benevolent society founded in 1818, in consequence of the dearth of the two preceding years. The members of this society bound themselves to contribute each a weekly sum, amounting to not more than a halfpenny of our money; but as the number of subscribers very soon amounted to 20,000, the aggregate sum collected was considerable. The persons to whom the management of the fund thus raised was entrusted, early conceived the project of founding colonies among the heaths which abound in that country, which should serve as asylums to different descriptions of paupers. These colonies were to be established with various objects. Some were to serve for the repression of mendicity; some as asylums for the poor and the aged; others were to be called free-colonies; colonies of orphans and foundlings; and colonies for the advancement of agricultural industry.

In the first year of its formation the society established the free colony of Frederik's-Oord, on the heath near to the provinces of Drent, Friesland, and Overyssel. This colony was composed of 52 small farms, the cultivation of which was commenced by the society, and it was peopled by persons from among the poorer classes, who were not in the receipt of alms. In 1819 the society proposed to the directors of the orphan asylums throughout the kingdom to receive for a certain annual payment any number of orphan children six years of age. To meet the new expense thus occasioned, the society borrowed 280,000 florins. The number of members of the society now amounted to 22,500, and their subscriptions to 82,500 florins, which enabled the directors to establish two other free colonies, in which they placed 500 families. In 1820 a fresh loan of 100,000 florins, joined to 78,000 florins of subscriptions, offered the means of establishing an equal number of families. In 1821 the subscriptions amounted to 121,000 florins, and a further loan was raised, amounting to 300,000 florins, the whole of which money was employed in the formation of free colonies. In 1822 the first colony for the repression of mendicity was established by the society, which further undertook, with the government, to locate in other colonies 4000 orphans, 2500 indigent persons, and 1500 beggars. The government was to pay 45 florins per annum for the maintenance of each orphan during 16 years, and not anything for the other settlers, which reduced the payments to 22.50 f. for each individual of the entire number. Up to the present time, however, the society has not been able fully to perform its engagement.

The following Statement of the Progress of these Pauper Colonies, as regards the Number of their Inhabitants, is taken from an official Report drawn up by order of the Dutch Government, and includes a period of Twelve Years, from 1820 to 1831, inclusive.

Years.	Individual Members of Poor Families. (Free Colonies.)	Orphans, Foundlings, or abandoned Children.	Beggars.	Individual Members of Veterans' Families.	Total.
1820	1,249	226	. .	. .	1,475
1821	1,737	365	. .	. .	2,102
1822	1,979	456	300	. .	2,735
1823	2,295	475	1,053	. .	3,823
1824	2,614	1,214	1,061	. .	4,889
1825	3,227	2,174	1,377	. .	6,778
1826	2,724	2,233	1,581	231	6,769
1827	2,560	2,059	1,763	401	6,783
1828	2,510	2,358	1,826	562	7,256
1829	2.626	2,340	1,942	543	7,451
1830	2,619	2,288	2,111	473	7,491
1831	2,694	2,297	2,406	456	7,853

In a country where pauperism is so widely spread as in Holland, the provision thus made for between 7000 and 8000 souls, of whom three-tenths are children, cannot have had any very sensible effect in checking the evil. According to Count Arrivabene, the kingdom of the United Netherlands, which in 1827 included a population of 6,166,854, contained, at that time, 11,440 charitable institutions, which contributed to the support of 1,214,055 individuals, being only a very small fraction less than one-fifth of the entire population. The sum expended for the relief of the poor in the same year amounted to 12,821,395 florins (1,068,450*l.*). The population of Holland in 1827 was 2,307,661, and assuming that the circumstances of the people were the same in the Dutch as in the Belgian provinces, the number who received relief from charitable funds would be 454,304, or 67 times the number then residing in the pauper colonies. The number of 1,214,055, above stated, includes the pauper children who were receiving instruction and some other recipients of the bounty of their fellow-citizens, whom in this country we should not exactly class as paupers, but when allowance is made for these, the amount of pauperism will still remain of frightful magnitude.

The " pauper colonies " are described by Mr. Senior as " large agricultural workhouses, and superior to the previous workhouses only so far as they may be less expensive, or, without being oppressive, objects of greater aversion."

" It is scarcely possible," he continues, " that they can be less expensive. The employing persons taken indiscriminately from other occupations and trades, almost all of them the victims of idleness and misconduct, and little urged by the stimulus of individual interest, in farming the worst land in the country—land so worthless that the fee-simple of it is worth only 24*s.* an acre—at an expense for outfit, exclusive of the value of the land, of more than 130*l.* per family, and under the management of a joint-stock company of more than 20,000 members, cannot but be a ruinous speculation. Nor does the institution appear to have repressed pauperism by the disagreeableness of the terms on which it offers relief; we have seen, on the contrary, that it has not prevented its steady increase."

The details respecting the "pauper colonies" of Holland have been here given at greater length than would otherwise have been thought necessary, from the sanguine expectations formed by many persons in England of their success, and of the advantage that might follow the adoption of a similar system in this country.

With the exception of the canton of Berne, some particulars relating to which have been given, Holland appears to be, after our own country, in the worst position of any nation in Europe in regard to the state of pauperism. To what is this attributable? The country is densely peopled, not so densely as England or Ireland indeed, but, with the exception of these countries, of some of the Italian states, of Belgium, and of the Rhenish provinces of Prussia, more thickly than any other European country. It is not to this circumstance, however, that we are to look for the solution of the question, but rather to the existence of so many thousand endowed institutions for the relief of the poor.

The receipts of the administration for the established charity-houses and hospitals in the different provinces of Holland, taken on an average for each year, during the twelve years from 1820 to 1831, amounted to more than six millions of guilders, or rather more than half a million sterling, viz.—

			Guilders.	
Revenues of properties and acknowledged rights			2,461,883	26
Proceeds of collections			1,320,551	48
Subsidies granted by parishes .	1,779,719	67		
„ the provinces	38,642	78		
			1,818,362	45
Revenues possessed by particular institutions .			414,021	13
			6,014,818	32

The average population of the provinces during the same period is stated to have amounted to 2,292,350, so that the average annual expense per head has been equal to 4*s.* 4¼*d.*, an expenditure apparently small when compared with that of England and Wales, which, in the year ending March 25, 1834, was equal in money to exactly double the rate just mentioned. In forming this estimate it should be borne in mind, however, that from the habits of the people and the comparative cheapness of provisions in Holland, as compared with England, the expenditure of the smaller sum in the first named of these countries is more nearly equivalent to the larger payments in this country than would at first appear. The amount of the annual earnings of a labouring family in Holland is stated to be from 12*l.* 10*s.* to 18*l.* 15*s.*, while the average income of a labouring family of equal size in England is stated, on the authority of many hundred returns sent from various quarters, to amount to 41*l.* 17*s.* 8*d.*, being considerably more than double the sum upon which the family of the Dutchman is obliged to subsist.

The system pursued in Belgium in regard to the poor is in most respects similar to that pursued in France, whence the laws under which it is administered were for the greater part derived at the period when Belgium formed an integral part of the French empire. The laws having reference to this subject, which were made during the continuance of the kingdom of the United Netherlands, and which are still in force in Belgium, are few in number, and so are the enactments which have as yet been passed since the separation from Holland in 1830.

Under the government of the Directory, three laws having reference to the relief of the poor were passed in 1796, by which the property belonging to almshouses, which had previously been confiscated, was restored to these establishments. The management of the almshouses was intrusted to commissioners appointed by the municipal authorities. The revenues of all those situated in the same commune were united into one fund for the common support of the whole, and in every commune there were appointed one or more *bureaux de bienfaisance*, for administering relief to the poor in their own houses. The administration of each of these bureaux was intrusted to five persons, and the funds placed at their disposal consisted of a tax of ten per cent. upon all public exhibitions made within the commune, together with whatever voluntary contributions they could obtain.

No change of any importance appears to have been made by the late or present government of Belgium with respect to the management of almshouses or bureaux de bienfaisance. The regulations decreed by the French Convention for the repression of mendicity and vagrancy have received some modifications in regard to the law of settlement, but it is not necessary to state the particulars here. Those regulations provided that every person found begging should be sent to his place of domicile; if he could not prove any domicile, he was to be imprisoned for a year, and if at the end of his imprisonment his domicile were still unascertained, he was to be transported to the colonies for not less than eight years. A person, who after being removed to his domicile should again be found begging, was to be imprisoned for a year, and on a repetition of the offence the punishment was to be doubled. During imprisonment he was to be set to work, and receive monthly one-sixth of the produce of his labour, and at the end of his imprisonment another sixth: the remaining two-thirds was to belong to the establishment in which he was confined. For the third offence beggars were to be transported. A person transported was to work in the colonies for the benefit of the nation, at one-sixth the average rate of wages of the colony. No person was to be transported under 18 or above 60 years of age. Those under 18 were to be detained until they arrived at that age, when they were to be transported; and those above 60 were to be imprisoned for life. By another provision every person convicted of having given any species of relief whatever to a beggar was, for the first offence, to forfeit the value of two days' labour, and on the repetition of the offence this forfeit was to be doubled.

As might have been expected, the provisions of this decree were found too severe for execution; and after having remained inoperative during 15 years, the law was replaced by the imperial decree of the 5th of July, 1808.

By that decree each department was directed to establish a *dépôt de mendicité*, to which all persons found begging were to be arrested and taken. If common vagrants, they were to be taken to prison. While in the depôt, they were to be kept under a severe discipline, and made to work at wages to be regulated by the prefect of the department, two-thirds of their earnings belonging to the establishment, and the remaining third to be paid to them on quitting the depôt. The expense of these depôts, which was at first shared between the department and the general government, has since been thrown entirely upon the department, which, on the other hand, receives the cost of supporting mendicants from the different communes in which they have their settlement (*domicile de secours*).

There are now in Belgium six dépôts de mendicité, one in each of the provinces of Antwerp, Brabant, Flanders, and Hainault; one for Namur and Luxembourg, and one for Liege and Limbourg. Almshouses for the old and indigent, and hospitals for the sick, are very numerous, and each commune possesses its bureau de bienfaisance for the distribution of out-door relief. The annual income of these bureaux amounted, in 1832, to 212,325*l*., and of the almshouses to 165,835*l*., making altogether 378,160*l*. We have not any data whence to calculate the whole sum expended for relief of the poor in Belgium, nor the number who receive relief, nor are there any means of determining with accuracy the general progress or diminution of pauperism in Belgium.

The *Société de Bienfaisance Belgique* was established in 1823, on the model of the society which existed in Holland, for the establishment of agricultural colonies, and contracted with the government to receive 1000 paupers at the annual sum of 35 florins (2*l*. 18*s*. 4*d*.) for each. In consequence of this arrangement beggars were sent by the local authorities either to these colonies or to the dépôts de mendicité, and of late, if their begging was unaccompanied by aggravating circumstances, the previous imprisonment adjudged by the penal code has not been inflicted.

At first the families placed in the colonies founded by the Société de Bienfaisance were placed each in a separate farm, on which were a house, barn, and stable, two cows, sometimes sheep, furniture, clothes, and other stock, of the estimated value, including the land (about 7½ statute acres), of 133*l*. 6*s*. 8*d*. sterling, which was charged against them as a debt due to the society. The occupants were bound to work at fixed wages, to wear a uniform, to conform to certain rules, and not to quit the precincts of the colony without leave. A part of their wages was retained to repay the advance made by the society, a further portion to pay for necessaries furnished from time to time by the society, and the remainder was paid to them in base coin, current only within the colony, and which could be expended only in shops established by the society within its limits. It was soon found that this plan could not be persisted in. The land was badly cultivated, and the cattle were lost for want of proper food and attention. The society, therefore, in 1828, took back the surviving cattle, and throwing all the farms into one, employed all the colonists indiscriminately in its cultivation. " From this time," says Mons. Ducpétiaux, in a report drawn up by him in 1832, " bound thus by obligations towards the society, which deprive him almost entirely of present liberty, without any hope of freedom in any time to come, the lot of the inhabitant of these so called free colonies is very similar to that of the serfs in the middle ages, and of Russian peasants now; it is rather less fortunate than that of the peasants of Ireland, who if, like him, they often have nothing to assuage the pangs of hunger but potatoes and coarse bread, have, at least, the power of disposing freely of their actions, and removing from place to place at their pleasure."

These Belgian colonies, therefore, from the establishment of which so much good to the community was predicted, may be pronounced a decided failure. They have merged into establishments for compulsory labour; the society by which they were established has taken up the profession of farming, and the colonists differ only from ordinary labourers in working, under the penalty of being treated as vagabonds in case of the unsatisfactory performance of their tasks.

That this method of farming has been unproductive to those engaged in it, has been demonstrated by Mons.

Ducpétiaux, the inspector-general of the prisons and benevolent institutions of Belgium, in the following statement, showing the number of labourers employed in each year from the establishment of the colonies to the year 1831, the expenditure of the society, and its annual receipts.

	Free Colonists.	Beggars.	Expenditure. Florins.	Receipts. Florins.
1822	127		38,899 50	
1823	406		93,532 07	
1824	537		106,102 72	12,339 31
1825	579	490	102,983 73	25,740 74
1826	563	846	163,933 45	56,476 88
1827	532	899	168,754 61	50,677 38
1828	550	774	144,645 28	54,994 62
1829	565	703	174,611 44	98,523 57
1830	546	598	127,358 72	67,718 72
1831	517	465	135,405 81	82,578 81

The sums included under the head of Expenditure do not include many of the expenses of the administration. They consist simply of the sums remitted to the director for defraying current expenses. On the other hand, the sums set down as receipts, instead of being merely the amount of the net profit, are, in fact, the value of the gross produce. On the 1st of July, 1834, the debts due by the society amounted to 776,021 florins (64,661*l.*), while the whole value of its property was only 536,250 florins (44,698*l.*), leaving a deficiency of 239,771 florins, or nearly 20,000*l.* sterling.

It would be well if, against this pecuniary loss, there could be reckoned any moral advantage to the country by which it has been sustained; but it is to be feared that not any benefit of this kind has resulted from the effort. Captain Brandreth, who visited the colonies, and whose report concerning them is inserted in the Appendix to the Report of the Poor Law Commissioners, gives us reason to believe that in this respect also these colonies have failed in producing any good result. He says,—"Among the colonists there were a few whose previous habits and natural dispositions disposed them to avail themselves, to the best of their ability, of the benevolent provisions thus offered for their relief, and who had worked industriously, and conducted themselves well, during their residence in the colony. Their land was cultivated to the extent of their means, and their dwelling-houses had assumed an appearance of greater comfort, order, and civilization than the rest. But these were too few in number, and the result too trifling to offer the stimulus of emulation to others.

"Those farms that I examined, with the above exceptions, were not encouraging examples; there were few evidences of thrift and providence, the interior of the dwellings being, in point of comfort, little, if at all, removed from the humblest cottage of the most straitened condition of labourers in this country.

"A clause in the regulations allows certain of the colonists, whose good conduct and industry have obtained them the privilege, to barter with the neighbouring towns for any article they may want.

"The nearest towns to the establishment of any note are Hoogstraten and Tournhout; but on inquiry I could not find that any intercourse was maintained with them, and the country round offered no evidences of the existence of a thriving community in the centre, exercising an influence on its traffic or occupations. In the winter, I should think the roads to the colonies scarcely practicable for any description of carriages.

"From what I saw of the social condition of the colonists, I am disposed to insist much upon the inexpediency of assembling, in an isolated position especially, a large community of paupers for this experiment.

"Admitting the physical difficulties to have been much less than they are, and the prospect of pecuniary advantage much greater and more certain, the moral objections to the system would outweigh them. Without the example of the better conditions of society, there can be no hope of such a community gradually acquiring those qualities that would fit the members of it for a better condition also. One or two families, established in the neighbourhood of an orderly and industrious community, would find the stimulus of shame, as well as emulation, acting on their moral qualities and exertions; but, as in the present case, where all are in a condition of moral debasement, both of those powerful stimuli are wanting."

A skilled artisan in Belgium may earn in summer from 1*s*. 2*d*. to 1*s*. 5*d*. per day, and in winter from 10*d*. to 1*s*. 2*d*. If unskilled, artisans will earn little more than half these rates. With these wages, joined to what may be earned by the wife and children, a family may subsist on rye-bread, potatoes, and milk. It is but rarely that they can procure meat. In towns where manufactures are carried on, the situation of artisans is better than that just described. Agricultural labourers are generally boarded by the farmer with whom they work.

The hasty sketch which has here been given of the system of poor-laws and their results in other countries of Europe has been derived from section F of the Appendix to the Report of the Commissioners for inquiring into the administration and practical operation of the Poor-Laws, and from the interesting Preface to that section by Mr. Senior. It does not appear to be within the purpose of this work to enter more fully into a description of the condition of the poor in other countries. The reader who is desirous of acquiring more detailed information upon this subject is referred to the work just mentioned, from which the following table is borrowed, with the view of showing the comparative state of comfort in which the poor of our own country, and those in other European communities, are able to live. Among the questions sent to the various parishes in England, it was asked,—"What in the whole might an average labourer, obtaining an average amount of employment, both in day-work and piece-work, expect to earn in the year, including harvest-work, and the value of all his other advantages and means of living, except parish relief? and what in the whole might a labourer's wife and four children, aged 14, 11, 8, and 5 respectively (the eldest a boy), expect to earn in the year, obtaining, as in the former case, an average amount of employment?"

The answers to these queries from 856 parishes give, for the annual earnings of the man, an average of	£27	17	10
And the answers from 668 parishes give, as the annual earnings of the wife and children, an average of	13	19	10
Annual average income of the family .	£41	17	8

To the further question—"Could such a family subsist on the aggregate earnings of the father, mother, and children, and if so on what food?"—Answers were returned from 899 parishes to the effect exhibited in the following table:—

COUNTIES.	Number of Parishes answering.	No. (Simply).	Yes. (Simply).	Barely, or without Meat.	With Meat.
Bedford	15	1	3	. .	11
Berks	24	2	1	2	19
Bucks	27	2	5	5	15
Cambridge......	33	2	11	3	17
Chester	12	. .	5	2	5
Cornwall	24	. .	1	2	21
Cumberland	33	. .	7	13	13
Derby	7	. .	2	. .	5
Devon..........	18	1	7	1	9
Dorset	16	1	4	2	9
Durham	30	. .	6	4	20
Essex	38	9	9	6	14
Gloucester......	19	. .	7	5	7
Hereford	16	2	1	5	8
Hertford	16	. .	2	6	8
Huntingdon	9	2	. .	1	6
Kent...........	43	5	12	2	24
Lancaster	14	. .	8	1	5
Leicester	14	. .	6	3	5
Lincoln	14	1	5	. .	8
Middlesex	2	. .	. .	. .	2
Monmouth	7	. .	2	1	4
Norfolk	27	2	8	. .	17
Northampton ...	14	. .	2	1	11
Northumberland	18	. .	2	. .	16
Nottingham	19	. .	7	1	11
Oxford	21	. .	8	3	10
Rutland	4	. .	3	. .	1
Salop	19	. .	1	. .	18
Somerset	22	2	. .	6	14
Southampton ...	43	3	7	6	27
Stafford	12	1	1	. .	10
Suffolk	26	4	9	3	10
Surrey..........	20	. .	5	2	13
Sussex	68	21	18	7	22
Warwick	31	1	4	4	22
Westmoreland..	17	3	4	5	5
Wilts...........	24	1	7	4	12
Worcester	18	1	6	2	9
York...........	65	4	16	17	28
	899	71	212	125	491

CHAPTER V.

EMIGRATION.

Circumstances under which Emigration may be desirable—Habit of non-interference on the part of Government—Private associations for promoting Emigration—Settlement in South Africa —Number of Emigrants from this Kingdom, 1820–1834— Arrivals of Emigrants at Quebec and New York, 1829–1834— Distribution of Emigrants in British America, 1834—Transportation of Criminals to New South Wales—Suggestion for their employment in British America—Number of Convicts transported, 1825–1833—Convict establishment in the Bermudas.

IN every country which is making any considerable progress in the arts of life, changes will from time to time occur in the sources of employment for particular classes of the people, which must be felt as a hardship by individuals, although to the country at large they are productive of great and permanent good. The introduction of the power-loom, which has so vastly increased the productive force of the kingdom, has worked, and still is working, injuriously to a numerous body of hand-loom weavers, who cannot find employment in other branches of industry without suffering great inconveniences and privations, and who are liable to be thrown wholly out of employment, or, at best, are obliged to submit to a scale of wages very inadequate to their wants.

It can scarcely be doubted, that in this and similar cases, a well-digested plan of emigration, under the sanction or direction of the government, might be rendered efficacious to repair the evil. It is true, that the mischievous effect of any such changes may be but transitory; that the increase made to the national wealth, and the additional calls for labourers in other branches, which are caused by the very circumstance that has brought about the misery of the few, would speedily absorb all, and more than all the hands which have been at first rendered idle. But the misery is not on that account less real while it lasts. Experience has shown that uneducated men pass with difficulty and unwillingly from occupations to which they have been long accustomed, and that the compulsory state of idleness to which they are for a time reduced by the failure of their wonted employment, too frequently becomes habitual. When this lamentable effect has been produced, the unfortuuate victims become, almost irrevocably, permanent burthens upon the community; and their wretchedness is made a theme for declaimers, who would fain persuade mankind that the sacrifices necessary for the onward progress of society are too great for the advantage, if indeed they are willing to admit that what is attained deserves in reality to be called an advantage.

If at the moment when the usual source of employment became stinted, and while yet the labourers possessed the energies of their minds unimpaired, some well-arranged plan of emigration were offered to them under the sanction of government, so as to give a reasonable assurance of future maintenance, it is probable that a large proportion of them would gladly embrace the offer, and the advantage to the proportion who might remain would be scarcely less certain, through the lessening of the number of competitors for employment. It may be doubted, however, whether the degree of watchful care here supposed on the part of government, if it were directed to another channel, might not sometimes be so employed as to secure a greater good to the community at large, not only at a smaller cost to the country, but also at a less present sacrifice on the part of the destitute labourers. If a Board of intelligent men were appointed in the metropolis, to whom representations of distress arising from want of employment might be made by parochial authorities, while demands for labouring hands were made to them by manufacturers or others in different parts of the country, who might be in the opposite condition, a much smaller outlay would suffice to restore the equilibrium of labour than would be called for to convey the unemployed to distant colonies, while the persons so transferred would be subjected to fewer cares and hardships, and would be called upon to make fewer sacrifices of feeling than must always attend the renunciation of one's native land, endeared as it is even to the poorest and humblest by the ties of consanguinity and friendship, and by those early habits and associations to which men cling with the pertinacity of instinct.* Times and occasions might, and sometimes would arise, when the redundancy of labourers in one district could not be met by openings in other quarters, and then it might be true economy on the part of the nation to provide the means required for emigration, and so to direct its course as to add to the prospective strength and welfare of the empire.

It has been too much the practice of successive governments in this country to deal with this question upon the principle of non-interference, and to leave the various disarrangements of society to right themselves. This undoubtedly they may at length do in every country, and the sooner in proportion to the general diffusion of intelligence among the people; but it is a true, although trite remark, that all governments are instituted for the benefit of the people; and it would be difficult to show that it is not as much the duty of rulers to provide, as far as they can, for the removal of a domestic calamity, as it is to guard the people entrusted to their care from foreign outrage.

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* The plan here proposed has lately been acted upon with the best result by the Poor-Law Commissioners, through whose instrumentality some of the superabundant agricultural labourers of Buckinghamshire and Bedfordshire have been removed to Lancashire, where they have been immediately furnished with employment.

England has not much to boast of in regard to its experiments in colonization. With the exception of the penal settlements in Australia, and that of Sierra Leone, which partakes of the same character, our colonies have all been the fruits of conquest. A few ill-considered efforts made during the last fifteen years are all that the government has done for the advancement of distant colonies, and one or two trifling grants, obtained from parliament at seasons of extraordinary pressure, constitute the only *direct* pecuniary assistance that has been rendered for the same purpose. Recently we have witnessed schemes for encouraging emigration set on foot by private associations for their own profit, the interference of government having been for the most part limited to the sale to the associations, of districts which might otherwise have continued valueless deserts for ages.

In the early part of the present century, although the cry of distress was occasionally loud and urgent on the part of the labouring classes, that distress was occasioned more by the dearness of provisions than by any deficiency of employment, as a remedy for which, if it had occurred, the ranks of the army were at all times open. The return of peace threw back in considerable numbers upon the community the surplus labourers who had been thus absorbed, two deficient harvests occurred consecutively in aggravation of this inconvenience, and in the year 1820, the evil had grown to so great a height that the government undertook the task of conveying settlers, and locating them in South Africa. The following table shows the number of persons who since that time have emigrated from the United Kingdom to the British American colonies, the United States of America, the Cape of Good Hope, and the British settlements in Australia respectively.

Years.	British North American Colonies.	United States of America.	Cape of Good Hope.	Australian Settlements.	Total.
1820	17,921		1,063	. .	18,984
1821	12,470		404	320	13,194
1822	11,282		192	875	12,349
1823	8,133		184	543	8,860
1824	7,311		119	780	8,210
1825	8,741		114	485	9,340
1826	12,818		116	903	13,837
1827	12,648		114	715	13,477
1828	12,084		135	1,056	13,275
1829	13,607		197	2,016	15,820
1830	30,574		204	1,242	32,020
1831	49,383		58	423	49,864
1832	66,339	32,980	202	3,792	103,313
1833	28,808	29,225	517	4,134	62,684
1834	40,060	33,074	288	2,800	76,222

The foregoing statement is given on the authority of Custom-house returns, and is of course correct, as far as the knowledge of the officers of that department extends. From other documents, equally authentic, we find, however, that the Custom-house returns are exceedingly defective. The following statements transmitted by the chief agent for emigrants at Quebec, and by the British consul at New York, exhibit numbers greatly exceeding in some years those contained in the former table.

Number of Emigrants who have arrived at Quebec in each of the six years from 1829 to 1834.

From	1829	1830	1831	1832	1833	1834
England and Wales.......	3,565	6,799	10,343	17,481	5,198	6,799
Ireland..................	9,614	18,300	34,135	28,204	12,013	19,206
Scotland	2,643	2,450	5,354	5,500	4,196	4,591
Hamburg and Gibraltar ...	. .	. .	. .	15		
Nova Scotia, Newfoundland, West Indies, &c. ..	123	451	424	546	345	337
Grand Total, 198,634 ...	15,945	28,000	50,256	51,746	21,752	30,933

Number of Emigrants who have arrived at New York in each of the six years from 1829 to 1834.

From	1829	1830	1831	1832	1833	1834
England and Wales	8,110	16,350	13,808	18,947	16,100	26,540
Ireland..................	2,443	3,497	6,721	6,050		
Scotland	948	1,584	2,078	3,286		
Grand Total, 126,462 ...	11,501	21,431	22,607	28,283	16,100	26,540

By the returns transmitted from Quebec we are made acquainted with various interesting particulars concerning the course of emigration towards that quarter. Among other things a list is given of the ports in England, Ireland, and Scotland, whence emigrants have departed in the four years from 1831 to 1834; a statement distinguishing the number of men, women, and children who arrived at Quebec and Montreal in each month of 1834, separating those who emigrated by means of parochial aid from those who defrayed their own expenses; and we have further a statement of the distribution after their arrival of the emigrants of 1834. These interesting documents, the first of them abridged by classing together the smaller ports in the different divisions of the kingdom, are here given.

Names of Ports whence Emigrants departed for Quebec and Montreal, during each of the years from 1831 to 1834.

	1831	1832	1833	1834
England and Wales.				
London	1,135	4,150	1,287	1,051
Portsmouth	. .	932	251	163
Dartmouth	9	196	81	82
Poole	106	150	84	1
Plymouth	474	1,398	440	850
Falmouth	77	107	31	59
Padstow	5	335	53	29
Bridgewater	280	306	16	37
Bristol	764	1,836	107	64
Liverpool	2,261	2,217	551	1,060
Whitehaven	138	795	413	72
Maryport	421	884	315	538
Workington	399	246	. .	29
Berwick and Newcastle	239	340	208	459
Sunderland	86	206	40	57
Stockton	. .	132	233	192
Whitby	471	236	46	273
Hull	2,780	1,288	655	1,171
Yarmouth	514	793	171	345
Other Ports	184	934	216	267
Total from England	10,343	17,481	5,198	6,799

	1831	1832	1833	1834
Ireland.				
Dublin	7,157	6,595	3,571	5,879
Wexford	229	157	21	23
Waterford	1,216	877	197	1,008
Ross	1,159	926	325	278
Youghall	210	159	53	203
Cork	2,735	1,987	925	2,261
Limerick	2,759	1,689	602	1,097
Galway	452	425	190	79
Westport	720	529	. .	221
Killala	514			
Sligo	4,079	2,961	657	2,114
Londonderry	2,888	2,582	1,852	1,580
Belfast	7,943	6,851	2,637	3,024
Newry	1,591	1,374	725	945
Other Ports	483	1,092	258	494
Total from Ireland	34,135	28,204	12,013	19,206
Scotland.				
Cromarty	460	638	298	276
Greenock	2,988	1,716	1,458	1,140
Glasgow	176	160	168	462
Dundee	249	439	194	99
Leith	664	1,145	622	661
Aberdeen	158	478	116	647
Isla	. .	181	601	358
Annan	. .	175	. .	391
Alloa	. .	231	. .	87
Inverness	361	. .	138	
Other Ports	298	337	601	470
Total from Scotland	5,354	5,500	4,196	4,591

Table showing the monthly arrival of Emigrants, from the United Kingdom, at Quebec and Montreal during the year 1834, specifying the number of Males and Females, and Children under 14 years of age, distinguishing also the number of Emigrants who defrayed their own expenses from those who received parochial aid.

Months.	Males.	Fem.	Children under fourteen years of age.	Emigrants at their own expense.	Emigrants with parochial aid.	Total.
May..	4,408	3,245	2,611	9,357	907	10,264
June .	3,343	2,347	1,777	7,027	440	7,467
July..	2,342	1,762	1,356	5,021	439	5,460
August	2,674	1,816	1,517	5,938	69	6,007
Sept...	501	333	272	1,085	21	1,106
October	297	184	148	613	16	629
Total	13,565	9,687	7,681	29,041	1,892	30,933

Distribution of the Emigrants who arrived at Quebec and Montreal in the season of 1834.

LOWER CANADA.

City and District of Quebec . . .	1,500	
District of Three Rivers . . .	350	
District of St. Francis and Eastern Townships	640	
City and District of Montreal . .	1,200	
Ottawa District	400	
		4,090

UPPER CANADA.

Ottawa, Bathurst, Midland, and Eastern Districts, as far as Kingston, included .	1,000
District of Newcastle and Township, in the vicinity of the Bay of Quinte . .	2,650
Toronto (late York) and the Home District, excluding settlements round Lake Simcoe	8,000
Hamilton, Guelph, and Huron Tract, and situations adjacent	2,660
Carried forward	14,310

Brought forward	14,310	4,090
Niagara Frontier and District, including the line of the Welland Canal, and round the head of Lake Ontario to Hamilton	3,300	
Settlements bordering on Lake Erie, including the London District, Adelaide Settlement, and to Lake Saint Clair	4,600	
		22,210
Died of cholera in Upper and Lower Canada	800	
Returned to the United Kingdom	350	
Gone to United States	3,483	
		4,633
Total		30,933

It is estimated by the very active and intelligent agent of the British government in Canada, Mr. Buchanan, who possesses the best opportunities for forming a correct judgment on the subject, that the capital conveyed into the province of Canada in the year 1834 by the above body of settlers, amounted to at least 1,000,000*l.* of sterling money. Several agriculturists took with them superior breeds of horses and cattle; one in particular, who has settled near Bytown on the Ottawa River, had fifty head of cattle of the most approved English breeds.

The whole of the labouring portion of the emigrants are reported to have found immediate occupation, with prospects of a cheering nature, so that nothing but industry and sobriety on their own part would be wanting to render their future course as free from worldly cares and risks as can be hoped for in this life.

The emigrants, 1892 in number, who in the course of the year were sent out at the expense of parishes, proceeded mostly from the agricultural counties of Hampshire, Sussex, and Norfolk; and it is gratifying to observe, from the testimony of Mr. Buchanan, that they were generally well provided with the requisite means, so as not to be a burthen to the charitable societies or individuals in the province, whose exertions and sacrifices on behalf of their expatriated fellow-countrymen, whenever called for, are deserving of the warmest commendations.

A large proportion of the emigrants from this kingdom, who land at New York, do not remain in the United States, but take that route to Upper Canada, in order to avoid the river St. Lawrence, the navigation of which, and of the coast near its mouth, is tedious and dangerous in the late autumnal months. The returns of Mr. Buchanan show the number of vessels wrecked in the season of 1834 to have been 17, and the lives lost to have amounted to 731. One reason assigned for this large proportion of losses, and for the comparative safety which accompanies the voyage to New York, is the excessive use of ardent spirits, in which the seamen who navigate English vessels are accustomed to indulge, and to which the sobriety maintained in American shipping affords a striking, and, for our countrymen, a very humiliating contrast.

The expatriation of criminals is a species of emigration of a character altogether different from that which takes place through the voluntary movements of individuals. Besides the great end of all punishment, the deterring of offenders, almost the only object kept in view by the government in our own penal settlements, has been that of removing out of the way of perpetrating further mischief against their fellow-citizens, a class of people whose energies, if applied in a right direction, might tend to the advancement of society. Having performed what is necessary for the end immediately proposed, the government has rested satisfied, as though it had done all that was demanded of it; and if, in the course of events, the settlements thus peopled by English convicts have come to be important colonies, the result has happened without any direct interference of the government, and at best with its permission only.

There can be no question that, by ridding the community at home of its pestilent members, a great benefit is conferred upon all the well-disposed members of society; but it by no means follows that *all* the good is thus attained which the operation might be made to yield. It is of great and manifest advantage to remove from cities the noxious matters which are continually accumulated within them; but we should think very little of the wisdom which simply carried away the mass to a situation beyond the point of immediate injury to the inhabitants, and which there left, in a profitless and inert condition, an agent which is susceptible, under other circumstances, of contributing to the support, the convenience, and the wealth of the people. And yet, what more has hitherto been done with regard to that small part of the criminals of these kingdoms which has, at an enormous expense, been sent to the other side of the globe? Although their absence has doubtless been a blessing to society in this country, and in some degree also a benefit to the colony which has received them, it can be easily shown that, by pursuing a different plan, the system of transporting convicts might have been made to yield advantages much greater than it has ever yet realized.

The circumstance which must first strike any person as extraordinary in regard to the expatriation of criminals from this country is the choice of the station to which they have been sent. That a country which, like England, is possessed of an almost boundless tract of unsettled fertile lands within four weeks' sail of her own shores, should in preference send her criminals to a territory which cannot be reached in less than as many months, thus multiplying the expense of their conveyance, is a course which requires for its justification some better reasons than have ever yet been brought forward. The safe custody of the convicts is not more surely attained by this increase of distance; and it may even be held, that a body of convicts conveyed some hundred miles into the interior of America would find it as difficult to escape thence as they do now from Australia, where they are necessarily located near to the shore. It remains then to be considered, what advantage beyond that of safe custody attaches to New South Wales as a criminal settlement, which would not be realized in a far greater degree by transporting offenders to the interior of Canada.

According to present appearances and the knowledge we have obtained concerning the nature of the country, it does not appear probable that Australia can ever become an agricultural country. The long continued droughts to which it is subject, and the nature of the greater part of the soil, seem to preclude that result. It can never therefore be thickly inhabited; and although, from the vast extent of the territory, many more settlers than at present reside in the colony may be able to locate themselves, and to provide employment for their convict labourers, with some advantage to themselves as individuals, it appears to be altogether improbable that the colony can ever assume anything approaching to the importance of our North American possessions, either in regard to productiveness or population.

The total number of inhabitants, Europeans, or the descendants of Europeans, living in New South Wales in the year 1833, was no more than 60,794, being little more than the number which in that one year left this kingdom as voluntary emigrants to join half a million of their countrymen in North America. Of the above number of 60,794, 24,543 were convicts; besides whom there were many others who had worked out the term of their punishment, or had been pardoned. It is clear, therefore, that with the exception of the few thousands of inhabitants not comprised in the classes we have enumerated, the population of New South Wales has but little claim for sacrifices on the part of this country. In these circumstances it is well worthy of consideration, whether it would not be advisable to cease from transporting convicts at so great a cost to that distant settlement, and instead to send them to a nearer place of exile, where their labour might be rendered in so great a degree valuable as speedily to return to the mother country the whole charge incurred for their conveyance, and to afford besides some means of making compensation to those whom their delinquencies have injured.

It is asserted, and it will not much weaken the position here assumed, at once to admit that the assertion is well founded,—that without convict labour the colony of New South Wales cannot possibly flourish. We have seen the trifling degree in which, during so many years, the advantage of that convict labour has attracted settlers; nor is there any reason to suppose that in future years the tide of emigration will set more strongly towards the colony than it has hitherto done. It may even be greatly doubted whether, in a moral point of view, it can be desirable that any large number of settlers should be exposed to the contamination arising from the society of characters considered unfit to associate with their fellow-beings in the country of their birth. From the nature of the country, the only occupations that can be followed in Australia render this contamination unavoidable. In New Brunswick and Canada the case is wholly different. There, for many years to come, works might be carried forward by means of convict-labour, which would speedily and amply repay every expense attending the conveyance of the convicts thither, and their support while there; while these works are of such a nature that none, save those persons to whom the charge and direction of the convicts would be intrusted, would necessarily be brought into contact with them.

If gangs of convict-labourers were placed a little beyond the verge of civilization, and employed in clearing and inclosing lands, constructing roads, and building bridges and dwellings, the lands thus prepared and improved would meet with ready purchasers at prices which would well repay to the government their previous outlay. The gangs might then be moved to other and more distant spots, and employed in similar works of utility, and in this way would relieve emigrants from many of the hardships and difficulties which they are now doomed to encounter at the commencement of their settlement.

The total number of convicts who arrived in New South Wales from this kingdom in each year, from 1825 to 1833 inclusive, was as follows:—

Years.	English.		Irish.		Total.
	Males.	Females.	Males.	Females.	
1825	764	140	901	111	1,916
1826	679	. .	1,036	100	1,815
1827	1,239	342	846	160	2,587
1828	1,589	179	752	192	2,712
1829	2,008	319	1,163	174	3,664
1830	2,096	128	685	316	3,225
1831	1,437	206	692	298	2,633
1832	1,810	248	928	133	3,119
1833	2,719	377	794	261	4,151
Total	14,341	1,939	7,797	1,745	25,822

being an average of 2869 per annum. The total number of the same class living in Van Diemen's Land in 1832 was 9884; and if the same proportions are applicable to both colonies, the annual average importation into Van Diemen's Land must have been 1709 convicts, making altogether 4578 persons of both sexes, in which number, the males being in the proportion of six to one female, we may assume that there are comprehended about 3700 labourers. The employment of 3700 labourers, annually increased by an equal number, would, under skilful management, effect a vast deal of good in the way here pointed out, and that number is perhaps quite as many as could be advantageously put to such work in the quarters to which the tide of emigration is now tending. But there is no reason to doubt, that if additional gangs were placed in other localities, such an impetus would be given to emigration by these facilities, as speedily to bring together occupants for every acre that would be thus improved.

There is unhappily but too much reason for believing that nearly the whole number of labourers who could thus be profitably employed might be furnished from the criminal population of the United Kingdom, unless, indeed, the increasing apprehension of being condemned to years of (to them) profitless toil, should be found to act as a salutary check upon the commission of offences, an effect which, to some extent, would probably be experienced. In the meantime let us inquire as to the degree in which, supposing the present rate of offences not to be so checked, it might be possible to recruit the gangs of convict-labourers.

It is a fact as notorious as it is deplorable, that in all our populous cities and towns, but especially in the metropolis, there are considerable numbers of persons whose only occupation is that of committing depredations on the property of the rest of the community. These wretched characters, who are well known to the police under the name of reputed thieves, spend nearly half of their time in prison, and the remainder in the perpetration of offences; and it is difficult to say at which of these periods they are employed most noxiously. While in confinement they are supported at a greater expense, and with a larger share of worldly comforts than can be commanded by a great number of our honest and industrious poor, in return for which their employment is either that of perfecting themselves in their nefarious arts through the instructions of villains more accomplished than themselves, or that of teaching others less experienced in criminality. Our prison-discipline has hitherto been so lax in this respect, that a youth who should be confined for only a short time in a gaol, is certain to have all his blunted feelings of virtue obliterated, while his vicious propensities are in a corresponding degree nurtured and strengthened. He has perhaps yielded to some strong temptation in a moment of weakness, and, but for the evil influence to which he is subsequently exposed in a prison, might have drawn back from the path of vice upon which he had thus merely entered; but let him once be so exposed, and he will become in all probability a lost character for the remainder of his life.

The mode in which the criminal returns of the kingdom have been hitherto made up, does not enable us to ascertain the number or proportion of criminals who follow lawless courses as a profession. From the ease with which the scene of their operations may be varied, and owing to the practice among them of giving in false names, it must often be difficult, and sometimes impossible, to ascertain that proportion with any near approach to accuracy. In the "Gaol Returns," annually made to Parliament, an attempt is made to supply this information; but as debtors and all kinds of offenders, as well those committed on the summary jurisdiction of magistrates, as the graver criminals brought before the courts of assize, are included in these returns, they do not enable us to draw any decided inferences. According to the statements there given, about one-sixth of the delinquents who annually pass through our gaols have previously been inmates of a prison. Out of each 100 of these relapsed criminals 56 have appeared once before at the bar of criminal justice; 20 have appeared twice before; 9 have appeared three times before; and 15 have appeared four times or more to answer for offences.

For the reasons already mentioned there can be no doubt that the proportion of one-sixth given in the gaol returns must be below the truth. The fact, however, that so many ill-disposed persons are continually let loose upon society to prey upon the honest, and to corrupt the weak and ignorant, is a circumstance which loudly calls for a remedy on the part of Government, which would surely be justified in removing the pestilence, and indeed would seem to be under an obligation of duty to do so. The degree in which this duty is incumbent upon the government has recently been placed in a very strong light by the highest criminal judge in the kingdom, who has expressed a doubt whether any government is fully justified in awarding punishments for crimes, unless it has previously taken every precaution for their prevention.

According to the gaol returns for 1834, the number of persons who became inmates of prisons in England and Wales during that year, amounted to within a very small fraction of 100,000, of whom 15,270 had on one or more previous occasions been subjected to punishment. Many of the offences for which this large number of persons were committed were of a comparatively trivial character. Vagrancy, assaults, want of sureties arising out of cases for breaches of the peace, trespasses, acts of petty pilfering, poaching, offences against the revenue laws, disorderly acts on the part of apprentices and workmen, and various other offences for which magistrates have the power of passing summary sentences of imprisonment for periods varying from a week to twelve months—these form the large majority of the causes of confinement; but even these offences—it would be harsh and unjust to call them crimes—are, through a culpable want of care on the part of those in authority, unintentionally, it is true, but unavoidably visited with the severest degree of punishment, in the destruction, by confinement in a prison, of all those moral and religious restraints which chiefly prevent men, whose natural good feelings have not been strengthened by education, from becoming nuisances to society.

If the contagion of bad example and vicious instruction could be avoided, the restraint of a prison might perhaps prove, when applied to minor offences, as good a corrective as any other punishment capable of general application, and especially if a system of irksome labour were engrafted on it. The suggestion already made of sending away criminals to labour in situations where none would be within the noxious influence of their evil precepts or example would take away from imprisonment, when inflicted on less grave offenders, the reproach to which it is now liable, and which renders it the most unfit instrument that can possibly be employed for correction, both as regards the individuals upon whom it is inflicted and society at large.

Since the year 1824, a considerable establishment of convicts has been kept up in the Bermudas, employed in constructing a breakwater, and in perfecting some fortifications at Ireland Island. The number at present so maintained is about 1000. The works upon which they are employed will, it is expected, be completed in three or four years from the present time, when the convicts will be withdrawn, as it is not intended to make the Bermudas a penal settlement. The suggestion that has been offered in regard to the employment of convict labour on the continent of North America is thus not unsupported by precedent, although the nature of the labour upon which the Bermuda convicts have been engaged is somewhat different from that suggested as desirable in the back woods of Canada or New Brunswick. If good has been found to result from this experiment on the part of the Government, there can be no reason to doubt that at least an equal benefit would follow the plan now recommended, as a means both of saving a considerable expense and of producing a good moral effect upon the idle and dissolute among the lower classes in this country.

SECTION II. PRODUCTION.

CHAPTER I.

AGRICULTURE.

Impossibility of importing any large proportion of Food for the Population—Importations of Wheat since 1801—Comparative smallness of its amount—Reasons for concluding that the Home Produce has increased—Means whereby this increase has been effected—Deficiency of statistical information connected with Agriculture in England—Improvements in Scotland—Inclosure Bills since 1760—Imports, Exports, and Average Prices of Wheat—Corn-Law of 1815—Conflicting testimony as to Agricultural Distress given to the Committee in 1833—Increased Rents since 1790—Adaptation of the Steam-Engine to the Draining of Fens—Effect upon Agriculturists of the restoration of a Metallic Currency—Land brought under Cultivation since 1760—Compared with increase of Population since 1801—Surface of cultivated, uncultivated, and unprofitable Land in each division and county of the United Kingdom in 1827—Proportion of cultivated Land to the Population at different periods during the present century—Probability of Population outstripping the productive powers of the soil—Supposed influence upon this question of the extensive construction of Rail-roads—Estimate of the number of Horses, the employment of which may by that means be rendered unnecessary.

IN every country the condition of its agriculture must be a subject of the very first importance. An inconsiderable state or colony may, it is true, without much danger or inconvenience, exist under circumstances which oblige it to be habitually dependent upon the soil of other countries for the food of its inhabitants; but a very little inquiry, and a very simple calculation, would suffice to convince us that this can never be the case with a numerous people. To supply the United Kingdom with the single article of wheat would call for the employment of more than twice the amount of shipping which now annually enters our ports, if indeed it would be possible to procure the grain from other countries in sufficient quantity; and to bring to our shores every article of agricultural produce in the abundance we now enjoy, would probably give constant occupation to the mercantile navy of the whole world.

These are assertions which every one can in a moment verify or disprove, by estimating the average consumption of each inhabitant of the kingdom, and multiplying its annual amount by the numbers of the population. If they are true, it must be equally true that every country which makes great and rapid progress in population must make equal progress in the production of food. A trifling addition to the number of the people might be met either by importations from abroad, or by a diminution of the proportion of food which they consume. But the first of these expedients is impossible when any great accession is made to the population; and it is a proposition, the truth of which will hardly be questioned, that where the people are deprived of any considerable proportion of their accustomed supply of food, it is highly improbable that their numbers should increase.

It has been shown in the previous section how greatly and how rapidly the population of the United Kingdom has increased since the beginning of the present century. During the thirty years that intervened between the census of 1801 and that of 1831, that increase amounted to 7,968,000 souls, and at the present time

(1836) must have reached about nine millions and a half—a number equal to the entire population of England (exclusive of Wales) in 1811.

This increase of inhabitants would be sufficient, as already remarked, to contradict the idea of any inadequacy in the quantity of food, if the observation and experience of every one did not enable him otherwise to disprove such a position; and as it is equally impossible to believe that the increasing wants of the people have been met by supplies from without, the conviction is irresistibly forced upon us, that a most important extension of agriculture must have taken place within the kingdom. It is not necessary for us, however, to rest satisfied upon this point with reasonings and calculations, however convincing, since we are enabled to ascertain with precision, from custom-house returns, the entire quantity of grain that has been imported into the kingdom for each one of a long series of years. It is equally unnecessary to load these pages with numbers and lengthened tables of figures, in order to make good the position that has been here advanced. The following short statement of the quantity of wheat that has been imported in each year of the present century will suffice to show how insignificant, when compared with the wants of the community, have been the supplies which we have drawn from foreign countries:—

	Quarters.
1801	1,396,359
1802	498,359
1803	297,145
1804	398,067
1805	842,879
1806	280,776
1807	379,833
*1808	
1809	424,709
1810	1,491,341
	6,009,468
Annual average,	600,946
1811	238,366
1812	244,385
1813	425,559
1814	681,333
1815	
1816	225,263
1817	1,020,949
1818	1,593,518
1819	122,133
1820	34,274
	4,585,780
Annual average,	458,578

	Quarters.
1821	2
1822	
1823	12,137
1824	15,777
1825	525,231
1826	315,892
1827	572,733
1828	842,050
1829	1,364,220
1830	1,701,885
	5,349,927
Annual average,	534,992
1831	1,491,631
1832	325,435
1833	82,346
1834	64,653
1835	28,483
	1,992,548
Annual average,	398,509

It appears from this statement, that in the ten years from 1801 to 1810, the average annual import of wheat into the kingdom amounted to 600,946 quarters; and as the mean number of the population during that period was 17,442,911 souls, this quantity would afford a very small fraction above a peck for the annual consumption of each person. The average importation in the ten years between 1811 and 1820 was 458,578 quarters; and as the mean number of the population had in that period advanced to 19,870,589, that number of quarters

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* The exports of wheat in this year exceeded the quantity imported.

would afford each person not quite one gallon and a half towards the year's consumption. In the third period, between 1821 and 1830, the average annual importation advanced to 534,992 quarters, but the population had advanced in an equal proportion, so that the annual share of each person in the foreign supply was still rather below the quantity (one gallon and a half) last stated. The average amount of importation in the five years from 1831 to 1835 has been somewhat less—398,509 quarters; and if we estimate the progressive increase of population at the rate of one and a half per cent. per annum, which experience has shown to be the actual rate of increase, the mean number of consumers in this period has been 25,218,221; so that if the importations had been fairly divided among them, each would annually have received just one gallon of wheat.

In each of the three periods of ten years into which our statement has been divided, there have been two years of large importation arising from deficient harvests, and in the last period of four years, the year 1831 was of this character. If those years were excluded from the calculation, the average importations would of course be materially lessened. Taking the last four years, the average has been only 125,229 quarters, or less than three pints per head for each one of the people; and if the calculation is limited to the years 1833, 1834, and 1835, the average importation of 58,494 quarters, brought from foreign countries and our colonies, would afford just one pint and one-fifth, equal to about 15 ounces of fine flour, during the year to each consumer.

The foregoing calculations show in how small a degree this country is dependent upon foreigners, in ordinary seasons, for a supply of our staple article of food. It is not, however, with this view that those calculations have been brought forward, but rather to prove how exceedingly great the increase of agricultural production must have been to have thus effectively kept in a state of independence a population which has increased with so great a degree of rapidity. To show this fact, the one article of wheat has been selected, because it is that which is the most generally consumed in England; but the position advanced would be found to hold equally good were we to go through the whole list of the consumable products of the earth. The supply of meat, during the years comprised in the inquiry, has certainly kept pace with the growth of population; and, as regards this portion of human food, our home agriculturists have, during the whole period, enjoyed a strict monopoly.

It would lead to a digression which might be considered out of place in these pages, if any attempt were made to examine the question of agricultural distress, as to which so much has been said year after year, during a very large portion of the time in which the extension of tillage and the increase of production, here described, have been going forward; but we may be allowed to remark that the parties who, during all that time, have embarked their capitals in this branch of industry, must have been actuated by motives altogether different from those which influence the rest of mankind, if they have, year after year, been content to accelerate their own ruin by increasing the extent of their operations. While the total number of families in Great Britain has increased, between 1811 and 1831, from 2,544,215 to 3,414,175, or at the rate of 34 per cent., the number of families employed in agriculture has increased only from 895,998 to 961,134, or at the rate of 7¼ per cent. The increased production which is thus seen to have been brought about by a comparatively small addition of labour, has in a great degree resulted from the employment of capital in improving the soil, in draining and manuring,* in throwing down a great part of the fences with which our forefathers were accustomed to divide their farms into small patches, by the use of improved implements of husbandry, and, above all, through the employment of a better system of cropping by rotation. Nor should we omit to notice, among the most effective causes of this improved condition of agriculture, the help that has been borrowed from men of science. In particular the researches of Davy, undertaken at the instance of the Board of Agriculture, about the beginning of the present century, may be mentioned as having produced the happiest results, by showing the various resources we can command, through the application of chemical knowledge, for remedying the defects and improving the natural capabilities of different soils. It may be added, that the great agricultural improvements which have taken place since the peace, and which are still in progress, while they negative the notion of an uninterrupted series of losses on the part of cultivators, are, in some degree, the consequence of the stimulus to exertion supplied by low prices. Had prices continued high, the farmers would perhaps have gone on in their old course; but with so considerable a fall as they have experienced in the value of their produce, such a course would have been attended with certain ruin, and in this way the improvements they have made may be said to have been forced upon them.

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* The use of crushed bones as a manure was first introduced in 1800; but the practice has not been extensively adopted until within the last twenty years. The application of this manure to light soils is now very general, and the result has been such as to raise the value of such lands most materially. The increasing demand causes large quantities of bones to be imported from foreign, and sometimes distant, countries. The numerous herds of cattle that roam in a state of nature over the plains of South America, used formerly to be slaughtered for the sake of their hides, tallow, and horns, which were brought to Europe. Their bones were left to whiten on the plains, but they are now carefully collected together, and ships are regularly dispatched to be loaded with them for the use of our farmers.

It would be to write a voluminous treatise on husbandry, minutely to describe the steps by which all the improvements here pointed out have been attained, and to show how they have combined for the production of the good effects which are now witnessed. Our present object will be better answered by describing the results which are generally experienced throughout the country, than by any minute detail of processes, some of which may not even yet meet the universal assent of practical agriculturists.

It is much to be regretted that in this country, rich as we are in the possession of facts connected with many branches of social economy, we are almost wholly uninformed with regard to the statistics of agriculture. The knowledge we have upon that most important subject, the quantity of land in cultivation within the kingdom, is entirely due to the industry of an individual whose estimates have never been either confirmed or questioned. What proportion of the cultivated land is applied to the production of any one article of food, it has never even been attempted to ascertain. We know every rood of ground that is employed for the cultivation of hops, because of the direct financial interest which the government has in ascertaining the fact; but it does not appear to be sufficiently understood how the national interest can be concerned in any kind of knowledge that does not yield money to the exchequer; and there is reason to believe, that if any comprehensive measure were adopted by the government, with a view to ascertain the actual condition of the country as regards its agriculture, so much jealousy and so many groundless fears would be excited in the minds of the persons from whom the information must be sought, that the returns obtained would be extremely erroneous, or so incomplete as to be of little value.

An endeavour to obtain a great part of this knowledge was made about forty years ago in Scotland, by a spirited individual, the late Sir John Sinclair, by whom the clergy of that part of the island were induced to prepare those accounts of their respective parishes, the collection of which is well known under the name of the "Statistical Account of Scotland." The property of this work was generously made over by Sir John to the Society established in Scotland for the benefit of the sons and daughters of the clergy; and the managers of that Society have recently undertaken to produce a new "Statistical Account of Scotland," for the preparation of which they have secured the assistance of the parochial clergy—a body in every way qualified for the correct performance of the task. Only a small portion of this interesting work has been published up to the present time; but if the statements relating to the remaining parts of the country are to resemble those of the counties already described, it must be allowed that the superintending committee are fully justified in the announcement made in their advertisement, that "they now present not merely a new statistical account, but, in a great measure, the statistical account of a new country." There has not hitherto been a single parish described in which improvements of various kinds, and to a great extent, are not stated to have been accomplished. A few extracts have been taken at random from the work, and are here inserted to illustrate the various forms, as well as the degree, in which those improvements have shown themselves.

Jedburgh, Roxburghshire.—" Since the period when the last statistical account was written, the state of the parish has been much improved: farms which were entirely pastoral now bear luxuriant crops, the fields have been neatly inclosed with hedges, waste ground has been planted, the style of dwelling-houses is now vastly superior, the means of communication have been greatly enlarged, the population has been nearly doubled, and all classes seem to enjoy a large share of the comforts of civilized society."

Melrose, Roxburghshire.—" The chief circumstance in which the present differs from the past state of the parish, is the general enlargement of the farms. Except in the case of a carrier or miller who rents a few acres to furnish fodder for his horses, a small farm is nearly unknown. The displacing of the old small tenants was at first viewed with deep regret; but the introduction of a better and more spirited style of agriculture which immediately followed, the rapid improvement of the country, which in a limited period has raised the rental of this parish from 4000*l.* nearly to 20,000*l.* a year, besides the improved condition of the agricultural labourers, seem to show that it was a change for the better. The land is divided into a limited number of great farms, and the tenants, men of capital and intelligence, are enabled to give the best effect to the virtues of the soil, and the great body of the people live quietly under them as farm-servants and hired labourers, having no care but to do their work and receive their wages."

Parish of Kinnettles, Forfarshire.—“There is not only a greater extent put under corn crop, green crop, and artificial grasses, but the same extent yields a produce very much superior, both in quantity and quality, to the produce of former times. Indeed it may with safety be said that the produce of grain and green crop is about double of what it was in 1792. Since that period the progress of agriculture has been rapid.”

Moffat, Dumfries-shire.—“In the cultivation of the arable soils a very great improvement has been made; and by removing obstructions, duly manuring and working the lands, observing a proper improved rotation, and keeping down or destroying noxious weeds—and further, by cultivating the most valuable crops—it is not too much to say, that within forty years the returns of the arable soils have become far better as well as more abundant.

“Let any one now look into the cottages, and he will find them nearly or fully as comfortable as the farmhouses were forty years ago; and let him compare the dress of the cottagers and their mode of living with that of the farmers at the above distance of time, he will find that at present they are not greatly inferior.”

Applegarth, Dumfries-shire.—“The difference between the present state of the parish and that which existed at the time of the last statistical account, is, as may naturally be expected, very great, though, from the want of minuteness in that account, it is not easy to point out, in many particulars, the precise degree of improvement. The mode of living is more comfortable, while the good old habits of domestic economy have not been impaired. The management of the land is more judicious, and of course it is greatly more productive.”

Dundee.—“The land under tillage may be said to be in a very improved state, no labour nor expense being spared to render it highly productive, and there are no particular obstacles to improvement. The following is about the average number of acres at present producing different kinds of grain, and the annual gross amount of raw produce:—

Wheat,	343 acres,	at 32 bushels per acre, and 7*s.* per bushel,	£3,841	12
Barley,	661 „	44 „ „ 3*s.* 6*d.* „	5,089	14
Oats,	762 „	48 „ „ 2*s.* 9*d.* „	5,029	4
Potatoes,	470 „	£10 per acre	4,700	0
Turnips,	521 „	12 „	6,252	0
Grass,	635 acres,	averaged, new and old, at £7 per acre .	4,445	0
Do.	555 „	inferior pasture and waste, at £1 per acre,	555	0
			£29,912	10

The following table of the number of inclosure bills passed by Parliament, of the annual excess of exports or imports, and of the average prices of wheat in England, will give a tolerably correct idea of the progress of agriculture in that part of the kingdom, during each of the 75 years between 1760 and 1835. For the convenience of examination, this table is divided into eight periods, seven consisting each of ten years, and the last of six years:—

Years.	Number of Inclosure Bills.	Excess of Export over Import.	Excess of Import over Export.	Average Price of Wheat in England.	
		Quarters of Wheat and Meal.	Quarters of Wheat and Meal.	Average Price, according to London Gazette.	
				s.	d.
1760	24	393,611	. .	36	6
1761	21	441,956	. .	30	3
1762	39	295,329	. .	39	0
1763	31	429,466	. .	40	9
1764	66	396,856	. .	46	9
1765	60	62,579	. .	52	0
1766	49	153,919	. .	43	1
1767	35	. .	492,834	64	6
1768	60	. .	341,835	60	6
1769		45,514	. .	45	3
	385	1,384,561		45	10
1770	63	75,415	. .	41	4
1771	67	7,579	. .	47	2
1772	70	. .	18,515	50	8
1773	65	. .	49,220	51	0
1774	62	. .	273,221	52	8
1775	42	. .	469,951	48	4
1776	58	190,086	. .	38	2
1777	99	. .	145,637	45	6
1778	66	84,676	. .	42	0
1779	68	217,222	. .	33	8
	660		431,566	45	0
1780	45	220,144	. .	35	8
1781	25	. .	56,845	44	8
1782	15	64,457	. .	47	10
1783	18	. .	532,240	52	8
1784	15	. .	127,659	48	10
1785	23	21,822	. .	51	10
1786	25	154,003	. .	38	10
1787	22	61,197	. .	41	2
1788	34	. .	65,739	45	0
1789	24	27,853	. .	51	2
	246		233,502	45	9
1790	26	. .	191,665	53	2
1791	38	. .	398,430	47	2
1792		277,861	. .	41	9
1793	46	. .	413,529	47	10
1794	42	. .	172,854	50	8
1795	39	. .	294,954	72	11
1796	75	. .	854,521	76	3
1797	86	. .	407,242	52	2
1798	52	. .	336,939	50	4
1799	65	. .	423,823	66	11
	469		3,216,096	55	11

Number of Inclosure Bills, &c.—*Continued.*

Years.	Numb. of Inclosure Bills.	Excess of Export over Import.	Excess of Import over Export.	Average Price of Wheat in England.	
		Quarters of Wheat and Meal.	Quarters of Wheat and Meal.	Average Price, according to London Gazette. s.	d.
1800	63	. .	1,242,507	110	5
1801	80	. .	1,396,359	115	11
1802	122	. .	498,359	67	9
1803	96	. .	297,145	57	1
1804	104	. .	398,067	60	5
1805	52	. .	842,879	87	1
1806	71	. .	280,776	76	9
1807	76	. .	379,833	73	1
1808	91	13,116	. .	78	11
1809	92	. .	424,709	94	5
	847		5,747,518	82	2
1810	122	. .	1,491,341	103	3
1811	107	. .	238,366	92	5
1812	133	. .	244,385	122	8
1813	119	. .	425,559	106	6
1814	120	. .	681,333	72	1
1815	81	. .	. .	63	8
1816	47	. .	225,263	76	2
1817	34	. .	1,020,949	94	0
1818	46	. .	1,593,518	83	8
1819	44	. .	122,133	72	3
	853		6,042,847	88	8
1820	40	. .	34,274	65	10
1821	25	. .	2	54	5
1822	13	. .	. .	43	3
1823	9	. .	12,137	51	9
1824	12	. .	15,777	62	0
1825	24	. .	525,231	66	6
1826	20	. .	315,892	56	11
1827	22	. .	572,733	56	9
1828	16	. .	842,050	60	5
1829	24	. .	1,364,220	66	3
	205		3,682,316	58	5
1830	21	. .	1,701,885	64	3
1831	9	. .	1,491,631	66	4
1832	12	. .	325,435	58	8
1833	15	. .	82,346	52	11
1834	16	. .	64,653	46	2
1835	4	. .	28,483	39	4
	77		3,694,433	54	7

It will be seen that in the ten years from 1760 to 1769, when the average number of inhabitants of England and Wales was 6,850,000 souls, the quantity of wheat produced was more than sufficient for home use by 1,384,561 quarters—an inconsiderable quantity, and so near to the then wants of the people, that the deficient harvests of 1767 and 1768 occasioned the importation of the comparatively large quantity of 834,669 quarters. There were no means employed during that period for ascertaining the prices of grain with the correctness that has since been attained, and those given in the table cannot be received with confidence. If the Eton price then bore the same proportion it has since borne to the average price as computed for advertisement in the London Gazette, and which is about 10*s.* per quarter below that given in the Eton records, the average price of wheat must have been then about 37*s.* per quarter. At this price agriculture appears to have been considerably stimulated, the number of inclosure bills passed by the legislature having been 385.* This stimulus was continued through the next decennary period, when the number of inclosure bills was increased to 660. This second period comprised five years of export and five years of import, the imports preponderating in quantity, but not considerably. The mean number of the population had in the meantime advanced to

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* In the year 1689 an act was passed allowing a bounty of five shillings per quarter upon all British-grown wheat exported when the home price did not exceed 48*s.* per quarter. This act was modified in 1773, so that the bounty was not payable after the average price exceeded 44*s.* per quarter, and in 1815 the bounty was repealed. In point of fact, no bounty could have been claimed in any year after 1792, when the average price for the whole year was only 41*s.* 9*d.*

7,520,000 souls, and the average price of wheat, as ascertained for insertion in the London Gazette, was 45*s*. per quarter. In the next period, viz., from 1780 to 1789, the mean number of the inhabitants had reached 8,170,000 souls, but the supply of wheat was brought more nearly to a level with the demand. Owing to the fluctuations of seasons, six of the ten years were years of export, and four were years of importation, but the excess of the quantity brought in over that sent out was no more than 233,502 quarters. The average price for the whole number of ten years was 45*s*. 9*d*., having once been as high as 52*s*. 8*d*. In two of the exporting years it will be seen that the average prices were above 50*s*. per quarter. The number of inclosure bills fell off during this period to 246.

In the next period of ten years, from 1790 to 1799, England ceased to be an exporting country for wheat. In 1792 the price fell to 41*s*. 9*d*., and a considerable quantity was shipped abroad; but this was the last occasion on which our farmers found relief in foreign markets for an over-abundant stock of grain. The war of the French Revolution immediately followed; and in 1795 a series of deficient harvests began, which forced up the prices of agricultural produce, and caused a great additional number of inclosure bills to be passed.

The deficiency was aggravated to a dearth in 1800 and 1801; the price of wheat was driven up to the then unprecedented height of 115*s*. 11*d*. per quarter; and a considerable breadth of land was additionally brought under the plough, the number of inclosure bills passed during the ten years reaching to 847. The trifling export of wheat in 1808, during which year the average price of that grain was 78*s*. 11*d*. per quarter, was not the consequence of any commercial demand from other countries, but was occasioned by military operations in the Peninsula. In 1810, the first year of the next decennary period, we experienced the effects of another deficient harvest, and imported the great quantity of a million and a half quarters of wheat. This fact is worthy of remembrance, as being in a remarkable degree illustrative of the axiom, that no difficulties interposed by governments are adequate to prevent the transmission of goods to a profitable market. A large proportion of the foreign grain at that time brought for consumption to this country was the produce of the soil of our bitterest enemy; and it surely should be sufficient for us to call to mind this fact, coupled with the remembrance of the deadly character then assumed by the contest between France and England, to be convinced, that so long as we possess the means of paying for the food which other countries can spare, we never shall be without an adequate supply of the necessaries of life. The average price of wheat in 1810 was 103*s.* 3*d.* per quarter; but this rate, owing to the then depreciated state of our currency, was not equal to more than about 90*s.* if paid in gold. In 1812 the price advanced to 122*s.*, but the depreciation of the currency was then still greater; and the real price was not beyond 5*l.* per quarter—a price sufficiently high, however, to cause the application of much additional capital to agricultural pursuits, so that in this year 133 inclosure bills were passed, being the largest number on record in any one year. The impulse thus given continued to operate for some time. It will be seen by inspection of the table, that 853 inclosure bills received the royal assent in the ten years between 1810 and 1820; but the increased production thus brought about, together with the much diminished cost of transport from foreign countries, caused so great a reaction in the markets for grain, that the average price of wheat for the year 1814 fell to a rate which, measured by the standard price of gold, was not more than 54*s*. per quarter.

In this state of things the cry of distress among the owners and occupiers of land became exceedingly urgent, and the Houses of Parliament so far sympathized with them as to pass an act in 1815 by which the monopoly of the home market was secured to the British grower of corn until the average price of wheat should reach 80*s*. per quarter, and that of other grain a proportionate elevation.

For some time but little opportunity was given for judging of the efficacy of this law. A deficient harvest in 1816 caused prices to rise so high as to render the act inoperative. In 1817 the harvest was again bad; during that year and 1818 more than 2,500,000 quarters of wheat were imported, and the prices, although not nominally so high as they had been in previous years, were extremely burdensome to the people, owing to the operation of the restoration of the currency, which was then in progress.

The previous occasions of deficient harvests which have been noticed were always followed by the application of additional capital for bringing waste or common-field lands into arable cultivation; and it may in a great measure be owing to the circumstance of those previous inclosures having greatly reduced the quantity of waste land applicable to this purpose, that the number of inclosure bills has since been materially diminished.

The number of inclosure bills passed in the ten years between 1820 and 1830 was only 205, not one-fourth part of the number passed in the preceding period of the like duration—a disproportion which is the more remarkable from these circumstances:—that the increase of population, which between 1811 and 1821 amounted to 2,645,738, was 3,113,261 between 1821 and 1831; and that the foreign supply during the first of these intervals was nearly double that obtained in the latter period. The disproportion between the average prices experienced in the two divisions of time was not so great in reality as in appearance, owing to the depreciation of the currency already noticed; but still when full allowance has been made for this consideration, it will be found that the fall of price was nearly 25 per cent. The periods of ten years chosen for making the comparison are sufficiently long for avoiding the objection that the seasons were less genial in the one case than in the other; and it is impossible, under these circumstances, to arrive at any other conclusion than that a larger amount of produce has of late been continually drawn from a given portion of ground than was obtained in general at the beginning of the century.

The select committee of the House of Commons, which sat in 1813 to inquire into the state of the corn trade, stated in their Report, that through the extension of, and improvements in, cultivation, the agricultural produce of the kingdom had been increased one-fourth during the ten years preceding the time of their inquiry.

Earl Fitzwilliam, whose practical acquaintance with the subject of agriculture few persons will question, has expressed unequivocally his belief that the land has of late years been made, by means of better farming, to yield an increased quantity of produce. The following passage, in which this opinion is given, occurs in his "Second Address to the Landowners of England on the Corn-Laws," published in April, 1835:—"It is somewhere about twenty years since we began to hear prophetic annunciations of this approaching abandonment of the soil. That, in the years which intervened between 1810 and the peace, wheat was extracted by a sort of hot-bed cultivation from soils whose natural sterility has, under the diminished pressure of necessity, and the influence of more genial seasons, rescued them from the plough, I entertain not a doubt; but I must confess that I have watched in vain for any extensive fulfilment of the prophecy. On the contrary, I am satisfied that the breadth of land under the plough (taking that as the criterion, though it is none, and I only take it in deference to those with whom I am arguing) is greater than it was in 1814, *and that the produce of equal surfaces of ploughed land has increased in a still greater ratio.*"

The opinion, however, thus confidently expressed as to the increased productiveness of the soil of late years, has been very decidedly contradicted by various agriculturists who were examined before a committee of the House of Commons in 1833. On that occasion some of the witnesses stated, that owing to a deficient application of capital to the land, its annual produce has fallen off in quantity from one-sixth to one-fourth—one gentleman, indeed, said as much as one-third—compared with former periods. It would have been difficult, under any circumstances, to believe that such a state of things could possibly be found existing, to any extent, in connexion with the facts of an opposite character which have been brought forward in these pages; but a slight examination of the evidence given before the committee is sufficient to explain the apparent inconsistency. It will be evident from that examination, that in every case where diminished production is asserted, the witnesses have spoken of the same description of soil—"cold clay lands;" and it is rather illogically argued, that because these lands have from time immemorial been employed for the production of wheat, therefore a diminution of produce from them necessarily establishes the fact that the rate of production generally is diminished. In answer to this assertion it may be observed, that during the last half century a great revolution has taken place in the management of land, and that by proper attention to the rotation of crops, and by the application of capital to other descriptions of soil, those soils have been brought to a state which enables the farmer to draw from them a better return than would follow the application of the same amount of labour to the old wheat lands. If reference is made to the evidence given before the Committee of the House of Commons, to which the numerous petitions complaining of agricultural distress were referred in 1821, it will be seen that at that time almost the only grain produced in the fens of Cambridgeshire consisted of oats. Since then, by draining and manuring, the capability of the soil has been so changed that these fens now produce some of the finest wheat that is grown in England; and this more costly grain now constitutes the main dependence of the farmers in a district where, fourteen years ago, its production was scarcely attempted. It was pretty generally understood at the time that the appointment of the Committee of 1833 was a concession made to those members of the House of Commons who fancied themselves interested in the continuance of the present system of corn-laws, and accordingly the whole tendency of the evidence given appears to be to make out the existence of distress among agriculturists, the amount of which would be aggravated by any alteration of the law. Under these circumstances, every kind of testimony which would bring to light a state of things adverse to the continuance of protection against foreign importation, was, if not purposely kept back, certainly allowed to appear with reluctance; and yet a body of evidence which proves, from facts which cannot be controverted, that all is not barrenness and desolation in our fields, is to be found in almost every page of that voluminous Report. Everywhere, the condition of agricultural labourers is stated to be visibly amended; and towns in agricultural districts, which are dependent upon the farming interest, have uniformly improved in extent, and in every other circumstance which indicates prosperity. Nor has the situation of the landowner been less materially improved, so far at least as his condition depends upon the rent which he receives for his land. With scarcely any exception, the revenue drawn in the form of rent, from the ownership of the soil, has been at least doubled in every part of Great Britain since 1790. This is not a random assertion, but, as regards many counties of England, can be proved by the testimony of living witnesses, while in Scotland the fact is notorious to the whole population. In the county of Essex, farms could be pointed out which were let just before the war of the French Revolution at less than 10*s.* per acre, and which rose rapidly during the progress of that contest, until, in 1812, the rent paid for them was from 45*s.* to 50*s.* per acre. This advance has not, it is true, been maintained since the return of peace: in 1818 the rent was reduced to 35*s.*, and at the present time is only 20*s.* per acre, which, however, is still more than double that which was paid in 1790. In Berkshire and Wiltshire there are farms which in 1790 were let at 14*s.* per acre, and which in 1810 produced to the landlord a rent of 70*s.*, being a five-fold advance. These farms were let in 1820 at 50*s.*, and at this time pay 30*s.*

per acre, being 114 per cent. advance upon the rent paid in 1790. In Staffordshire there are several farms on one estate which were let in 1790 at 8*s*. per acre, and which having in the dearest time advanced to 35*s*., have since been lowered to 20*s*., an advance, after all, of 150 per cent. within the half century. The rents here mentioned as being those for which the farms are now let, are not nominal rates from which abatements are periodically made by the landlord, but are regularly paid, notwithstanding the depressed prices at which some kinds of agricultural produce have of late been sold.

In Norfolk, Suffolk, and Warwickshire, the same, or nearly the same, rise has been experienced; and it is more than probable that it has been general throughout the kingdom. During the same period the prices of most of the articles which constitute the landlord's expenditure have fallen materially; and if his condition be not improved in a corresponding degree, that circumstance must arise from improvidence or miscalculation, or habits of expensive living beyond what would be warranted by the doubling of income which he has experienced and is still enjoying.

The opinion that has been stated in regard to the altered system of farming, and which has caused light soils to be applied to uses for which, in former times, the heavy lands alone were considered fit, is corroborated by a communication made to the Poor-Law Commissioners from Worcestershire, and inserted in the Appendix (C. p. 419) to their Report:—"Looking to the rent-rolls (land-tax and other documents) of former times, it will be found, that whilst stiff (wheat and bean) land has stood still, or is rather deteriorated in value, the light, or what is called poor land, from an improved system of cropping, has risen most considerably. I should say, proportionally, that where stiff land yields a rent of 22*s*. to 25*s*. an acre, the light land will bring from 30*s*. to 35*s*.; and what makes the latter more sought after now-a-days is, that it requires fewer horses, and those of inferior strength, less manual labour to keep it clean, and the farmers can 'get upon it' in all weathers, and thereby secure more regular crops."

Among the agents employed for the improvement of agriculture we have now to mention the steam-engine. The fens in Cambridgeshire, Lincolnshire, and other eastern counties in which the low lands known as the Bedford Level occur, were formerly very imperfectly relieved from their surplus water by means of windmills, and to a considerable extent they are so still. Where this is the case, the farmer has sometimes to witness the frustration of all his hopes for the year, almost at the very period of their expected accomplishment. It frequently happens, that when rain falls in large quantities near the time of harvest, there is not a breath of wind to move the sails of his mill, and the field in which the yellow grain was waving is speedily converted into a lake. Some of the land thus circumstanced is among the most fertile in the kingdom, consisting of a bed of decomposed vegetable matter thirty feet in depth, and yielding crops of from four to five quarters of wheat per acre. By the substitution of steam-power for the uncertain agency of wind, the crop is now secured from the disaster we have mentioned. The expenditure of a few bushels of coals places it at all times in the farmer's power to drain his fields of all superfluous moisture, at a comparatively inconsiderable cost. It has been found that an engine of the power of ten horses is sufficient for draining 1000 acres of land, and that on the average of years this work may be performed by setting the engine in motion for periods amounting, in the aggregate, to 20 days of 12 hours each, or 240 hours in all. Several engines have been erected for this purpose within the last three or four years, some of them having the power of 60 or 70 horses; each of these large engines is employed in draining from 6000 to 7000 acres of land. The cost of the first establishment of these engines is stated to be 1*l*. per acre, and the expense of keeping them at work 2*s*. 6*d*. per acre. This plan is found to bring with it the further advantage, that, in the event of long-continued drought, the farmer can without apprehension admit the water required for his cattle and for the purpose of irrigation, secure in the means he possesses of regulating the degree of moisture if the drought, as is frequently the case, should be followed by an excess of rain.

The assertion made by many persons who were examined before the Committee in 1833, that the capital engaged in agricultural pursuits has of late years been much diminished through the losses of farmers, and that its amount is now inadequate to the proper development of the powers of production, may well be questioned in the circumstances of abundance which have now for some years removed all necessity for importing foreign grain to supply the demands of our constantly increasing and fully employed population. There is a passage in the Report made by Mr. Day, of Maresfield in Sussex, to the Poor-Law Commissioners, in which this subject is combated so successfully that we cannot perhaps do better than quote his own words:—

"That more capital, to any extent, could be *profitably* employed in agriculture, under existing circumstances, appears to me very questionable. Were it so, how happens it that of so much unemployed capital as exists at present, hardly any part of it should be diverted into this channel? or why do those farmers and yeomen who are known to have proportionally more capital than the ordinary tenants, or at any rate, in the latter case, more credit, and consequently the power of borrowing, in the mass farm so little better than their neighbours? Besides, too, if more capital were employed *generally*, it must create more produce. Would not this have the same effect upon the market as an abundant harvest? And should we not have a continual succession of years and prices similar to those of 1820, 1821, 1822, &c., until, from the great loss occurring, the extra capital were again withdrawn, and a surplus population again weighing us down? More capital may be employed with advantage on any given farm, because the additional produce raised by it is too small to affect the market: it is otherwise were this to take place over the whole kingdom; and could we suppose 10 per cent. additional capital employed on the land, it is more than probable that it would have the effect not only of yielding no profit on itself, but of absolutely lowering that which now exists on the present capital. The fallacy lies, as is too generally the case, in arguing from particulars to generals."

It is the fashion among those persons, in and out of Parliament, who complain of the distressed state of the agricultural interest, to inveigh against the measure adopted in 1819 for restoring the metallic currency, as one which has brought ruin and desolation among the farmers. That measure, in conjunction with the law of 1826, which prohibited the issue of notes for less sums than 5*l.*, is said to have deprived the occupiers of land of the resource they previously had in the country banker, who was always willing to accommodate them with the loan of his notes. Let us suppose that those who thus complain should succeed in their endeavours to procure the repeal or modification of these alleged injurious laws—what would be the best result they could anticipate? They would certainly not be forced to bring their produce so early to market, and, by keeping it back, might for a time raise the price and check consumption. Let us imagine that this effect is produced to the extent of one-tenth of their crops. In the next year this operation would be repeated, and the surplus on hand would amount to one-fifth, and even more, because, by the application of the banker's capital, larger harvests would be obtained. It is but little likely that with so large a surplus produce on hand, prices could be so long maintained above their natural level, but let us suppose that all the farmers in the kingdom should act upon this system for ten years, in what respect would their situation be benefited at the end of that time? They would have in their rick-yards produce equal to at least one year's consumption beyond the ordinary stock, and this surplus would be actually and purely surplus, and altogether unsaleable, except at prices which would create markets for it in other countries.

The result here supposed appears to be that which would necessarily follow from placing fictitious capital in the farmers' hands, if such a measure could be adopted without at the same time influencing prices generally throughout the country. But it is idle to suppose that the effect of making any great addition to the currency would be limited to agricultural produce. Theory and experience unite in showing that a general rise of prices must unavoidably follow any such addition. Under these circumstances, the only person to be benefited is the man who has pecuniary obligations to discharge, the amount of his gain being the unerring measure of his creditor's loss. This effect, besides, can have no operation except upon engagements contracted before the enlargement of the circulation; all future operations would be governed by the new state of things, and thus, for the sake of procuring a little temporary relief for a limited class of persons, certain injustice is to be committed upon others, our foreign commerce is to be subjected to hazardous experiments, the employments of our artisans are to be circumscribed, and the whole frame of society disarranged.

It is not possible to state the amount of land which has been brought into cultivation under the inclosure acts of which mention has been made. In a Report drawn up by a Committee of the House of Commons, which sat in 1797 to inquire into the state of the waste lands, an estimate is given of the number of acres which had been comprised in the inclosure bills carried into execution between 1710, when the first inclosure bill was passed in England, and the time of the inquiry. If the estimate of this Committee be taken as the basis of a further calculation, it will be found that the whole number of acres brought into cultivation from the beginning of the reign of George III. to the end of the year 1834 has been 6,840,540, viz.:—

	Acres.
From 1760 to 1769 . . .	704,550
„ 1769 to 1779 . . .	1,207,800
„ 1780 to 1789 . . .	450,180
„ 1790 to 1799 . . .	858,270
„ 1800 to 1809 . . .	1,550,010
„ 1810 to 1819 . . .	1,560,990
„ 1820 to 1829 . . .	375,150
„ 1830 to 1834 . . .	133,590
	6,840,540

The proportion brought into use since the commencement of the present century has, according to this estimate, been about three millions and a half of acres, fully six-sevenths of which were so appropriated in the first twenty years. It may serve to illustrate the position that has been advanced concerning the improved methods of cultivation pursued during the last fifteen years, if the proportionally decreasing quantities of land brought into use during the three decennary periods from 1801 to 1831, and subsequently, are exhibited in contrast with the increase of the population during the same period in the United Kingdom:—

	Inclosure Bills.	Acres.	Increase of Population.
1801 to 1810, inclusive,	906	1,657,980 . . .	2,209,618
1811 to 1820 „	771	1,410,930 . . .	2,645,738
1821 to 1830 „	186	340,380 . . .	3,113,261
1831 to 1835 „	56	102,480 (estimated)	1,458,403

Some further light will be thrown upon this subject by the insertion of a statement, distinguishing the quantities of land which were in a state of cultivation from those of land uncultivated but improvable, and from unprofitable wastes in the several counties of each division of the kingdom, as computed in the beginning of 1827. This statement, which was drawn up by Mr. William Couling, a civil engineer and surveyor, was delivered in by him when examined before the Select Committee of the House of Commons, which was appointed in that year to inquire into the subject of emigration from the United Kingdom. It does not pretend to absolute accuracy; but considerable knowledge and industry having been employed in preparing it, the statement may be received as a near approximation to the truth, and as the best evidence that can be adduced on the subject. In support of his statement, Mr. Couling told the Committee that his calculations were for the most part the result of personal inspection, he having carefully examined the greater part of 106 counties, and partially travelled over the remaining 11, the aggregate length of his journeys, for the purpose, having exceeded 50,000 miles. Mr. Couling further assured the Committee that where he had not enjoyed the means of making personal inspection, he had consulted and availed himself of the very best authorities for completing his estimates.

A General Statement of the Territorial Surface of Great Britain, Ireland, and the adjacent Islands; exhibiting the Quantity of Statute Acres of Cultivated Lands, of the Wastes capable of being brought into a state of cultivation, and of all other kinds of surface unfit for the production of Grain, Vegetables, Hay, or Grasses. May, 1827.

ENGLAND.

COUNTIES.	Cultivated.	Uncultivated.	Unprofitable.	Summary.
Bedford	248,000	31,000	17,320	296,320
Berks......	380,000	75,000	28,840	483,840
Buckingham	440,000	5,000	28,600	473,600
Cambridge .	500,000	17,000	32,120	549,120
Cheshire ...	594,000	40,000	39,280	673,280
Cornwall ...	550,000	190,000	109,280	849,280
Cumberland	670,000	150,000	125,920	945,920
Derby	500,000	100,000	56,640	656,640
Devon	1,200,000	300,000	150,560	1,650,560
Dorset	573,000	25,000	45,200	643,200
Durham....	500,000	100,000	79,040	679,040
Essex	900,000	10,000	70,480	980,480
Gloucester ..	750,000	6,000	47,840	803,840
Hants......	900,000	80,000	61,920	1,041,920
Hereford ...	495,000	24,000	31,400	550,400
Hertford ...	310,000	8,000	19,920	337,920
Huntingdon.	220,000	3,000	13,800	236,800
Kent	900,000	20,000	63,680	983,680
Lancashire .	850,000	200,000	121,840	1,171,840
Leicester ...	480,000	5,000	29,560	514,560
Lincoln	1,465,000	180,000	113,720	1,758,720
Middlesex ..	155,000	17,000	8,480	180,480
Monmouth .	270,000	30,000	18,720	318,720
Norfolk	1,180,000	78,000	80,880	1,338,880
Northampton	555,000	50,000	45,880	650,880
Northumb...	900,000	160,000	137,440	1,197,440
Nottingham.	470,000	28,000	37,680	535,680
Carried forw.	16,955,000	1,932,000	1,616,040	20,503,040

England.—Continued.

COUNTIES.	Cultivated.	Uncultivated.	Unprofitable.	Summary.
Brought forw.	16,955,000	1,932,000	1,616,040	20,503,040
Oxford	403,000	50,000	28,280	481,280
Rutland	89,000	1,000	5,360	95,360
Salop	790,000	20,000	48,240	858,240
Somerset ...	900,000	88,000	62,880	1,050,880
Stafford	560,000	85,000	89,720	734,720
Suffolk.....	820,000	88,000	59,680	967,680
Surrey	400,000	50,000	35,120	485,120
Sussex	625,000	170,000	141,320	936,320
Warwick ...	510,000	30,000	37,280	577,280
Westmoreland	180,000	110,000	198,320	488,320
Wilts	500,000	200,000	182,560	882,560
Worcester ..	400,000	30,000	36,560	466,560
Yorkshire ..	2,500,000	600,000	715,040	3,815,040
	25,632,000	3,454,000	3,256,400	32,342,400

Wales.

COUNTIES.	Cultivated.	Uncultivated.	Unprofitable.	Summary.
Anglesea ...	150,000	10,000	13,440	173,440
Brecknock ..	300,000	80,000	102,560	482,560
Cardigan ...	245,000	80,000	107,000	432,000
Carmarthen.	342,000	60,000	221,360	623,360
Carnarvon ..	160,000	60,000	128,160	348,160
Denbigh....	360,000	20,000	25,120	405,120
Flint	130,000	10,000	16,160	156,160
Glamorgan .	305,000	60,000	141,880	506,880
Merioneth ..	350,000	20,000	54,320	424,320
Montgomery	240,000	100,000	196,960	536,960
Pembroke ..	300,000	20,000	70,400	390,400
Radnor.....	235,000	10,000	27,640	272,640
	3,117,000	530,000	1,105,000	4,752,000

SCOTLAND.

COUNTIES.	Cultivated.	Uncultivated.	Unprofitable.	Summary.
Aberdeen...	300,000	450,000	520,740	1,270,740
Argyle.....	308,000	600,000	1,524,000	2,432,000
Ayr	292,000	300,000	432,000	1,024,000
Banff......	120,000	130,000	70,000	320,000
Berwick....	160,000	100,000	25,600	285,600
Bute.......	60,000	40,000	65,000	165,000
Caithness...	70,000	75,000	250,680	395,680
Clackmannan	22,000	5,000	3,720	30,720
Cromarty ...	20,000	5,000	14,690	39,690
Dumbarton .	70,000	50,000	27,200	147,200
Dumfries ...	212,000	320,000	620,000	1,152,000
Edinburgh..	181,000	20,000	29,400	230,400
Elgin	120,000	200,000	217,600	537,600
Fife	200,000	85,000	37,560	322,560
Forfar	200,000	220,000	117,600	537,600
Haddington.	100,000	30,000	30,000	160,000
Inverness...	500,000	750,000	1,694,000	2,944,000
Kincardine .	110,000	50,000	42,870	202,870
Kinross	30,000	10,000	13,120	53,120
Kirkcudbright	110,000	200,000	254,480	564,480
Lanark	220,000	195,000	141,800	556,800
Linlithgow..	50,000	10,000	11,680	71,680
Nairn......	70,000	30,000	28,000	128,000
Peebles	104,000	80,000	46,400	230,400
Perth	500,000	550,000	606,320	1,656,320
Renfrew....	100,000	20,000	34,240	154,240
Ross.......	301,000	545,000	929,830	1,775,830
Roxburgh ..	200,000	100,000	157,600	457,600
Selkirk.....	85,000	30,000	53,320	168,320
Stirling	200,000	50,000	62,960	312,960
Sutherland..	150,000	600,000	372,560	1,122,560
Wigton	100,000	100,000	88,960	288,960
	5,265,000	5,950,000	8,523,930	19,738,930

IRELAND.

COUNTIES.	Cultivated.	Uncultivated.	Unprofitable.	Summary.
Antrim.. ..	336,400	218,870	119,136	674,406
Armagh ...	166,000	92,430	51,233	309,663
Carlow.....	173,000	34,000	15,021	222,021
Cavan	265,400	160,500	61,720	487,620
Clare	579,000	104,400	88,044	771,444
Cork.......	1,188,000	361,000	150,056	1,699,056
Donegal....	507,000	417,920	175,951	1,100,871
Down......	349,000	126,170	89,481	564,651
Dublin.....	159,130	49,920	21,071	230,121
East Meath .	465,000	40,120	26,078	531,198
Fermanagh .	254,000	120,500	84,689	459,189
Galway	829,200	532,040	242,479	1,603,719
Kerry......	556,300	348,410	144,483	1,049,193
Kildare	259,990	87,670	35,875	383,535
Kilkenny...	403,100	58,100	25,367	486,567
King's Co...	341,310	80,900	34,954	457,164
Leitrim	222,250	128,200	64,189	414,639
Limerick ...	460,000	114,110	52,425	626,535
Londonderry	279,400	172,070	80,214	531,684
Longford ...	121,900	41,460	53,963	217,323
Louth......	157,000	12,000	10,415	179,415
Mayo......	502,900	565,570	212,302	1,280,772
Monaghan ..	257,000	12,000	21,952	290,952
Queen's Co.	311,100	47,120	22,966	381,186
Roscommon.	348,000	122,460	91,113	561,573
Sligo	143,500	189,930	66,953	400,383
Tipperary ..	693,200	113,490	92,329	899,019
Tyrone.....	539,900	135,020	91,988	766,908
Waterford ..	348,500	44,220	33,016	425,736
West Meath	287,330	51,200	36,581	375,111
Wexford ...	340,470	156,200	58,828	555,498
Wicklow ...	281,000	162,000	61,792	504,792
	12,125,280	4,900,000	2,416,664	19,441,944

BRITISH ISLANDS.

	Cultivated.	Uncultivated.	Unprofitable.	Summary.
Man............	95,000	23,000	22,800	140,800
Scilly, Jersey, Guernsey, Alderney, Sark, &c.	68,690	31,000	30,669	130,359
Orkneys & Shetland	220,000	112,000	516,000	848,000
	383,690	166,000	569,469	1,119,159

RECAPITULATION.

	Cultivated.	Uncultivated.	Unprofitable.	Summary.
England ...	25,632,000	3,454,000	3,256,400	32,342,400
Wales	3,117,000	530,000	1,105,000	4,752,000
Scotland ...	5,265,000	5,950,000	8,523,930	19,738,930
Ireland	12,125,280	4,900,000	2,416,664	19,441,944
Brit. Islands	383,690	166,000	569,469	1,119,159
	46,522,970	15,000,000	15,871,463	77,394,433

	Arable and Gardens.	Meadows, Pastures, and Marshes.	Wastes capable of Improvement.	Annual Value of Wastes in their present state.	Incapable of Improvement.	Summary.
	Statute Acres.	Statute Acres.	Statute Acres.	Sterling Pounds.	Statute Acres.	Statute Acres.
England ..	10,252,800	15,379,200	3,454,000	1,700,000	3,256,400	32,342,400
Wales.....	890,570	2,226,430	530,000	200,000	1,105,000	4,752,000
Scotland ..	2,493,950	2,771,050	5,950,000	1,680,000	8.523,930	19,738,930
Ireland....	5,389,040	6,736,240	4,900,000	1,395,000	2,416,664	19,441,944
Brit.Islands	109,630	274,060	166,000	25,000	569,469	1,119,159
	19,135,990	27,386,980	15,000,000	5,000,000	15,871,463	77,394,433

It appears from this statement, that up to the beginning of 1827, the number of statute acres in cultivation in the United Kingdom, including under that description meadows and pastures, amounted to 46,139,280, being as near as possible two acres for each inhabitant, the aggregate population at the end of 1826 having been 23,061,414 souls. The land included in the inclosure bills passed since that year, estimated by the rule before described, has amounted to no more than 247,050 statute acres, while the numbers added to the population have been 2,703,707 souls, thus affording not one-tenth part of an acre per head for each additional inhabitant. This must be considered a further proof of the generally increased productiveness of the soil during the last few years.

The land in cultivation at the beginning of the century, computed from Mr. Couling's statement, in connexion with the number of inclosure bills, was 42,881,880 statute acres, and the population having at that time been 16,338,102, the proportion of cultivated land was 231 statute acres for each 100 inhabitants. The additions since made to the cultivated land* and to the population have been 3,504,450 acres and 9,427,020 inhabitants; so that for every 100 individuals added to the population only 37 acres have been brought into cultivation, being not quite a rood and a half for each person. If the whole breadth of land now in cultivation were divided equally among the population, exactly one acre and four-fifths would fall to the lot of each. It thus appears that 10,000 acres of arable and pasture land, which, as cultivated in 1801, supported 4,327 inhabitants, do, at the present day, owing to the improvements brought about in the art of agriculture, support 5,555 inhabitants.

If the division of the cultivated land into arable and pasture, made by Mr. Couling, be correct, the number of statute acres at present under cultivation by the spade and plough in the United Kingdom, is 19,237,607, or about two-fifths of the whole cultivated land of the country. Supposing the same proportion to be preserved, if the whole of the improvable land now uncultivated were brought to its full use, an addition would be made to the arable and garden land of 6,000,000 of acres; and if the scale of productiveness were continued at its present amount, this quantity would furnish food for 8,332,750 people—a number which, at its present rate of progression, will have been added to our population by the year 1855, being 19 years from the present time. It is certain, however, that the land which has hitherto lain neglected is not of the average fertility, and, in the case assumed, of no further improvements being brought about in the processes of agriculture, the limit of production would be overtaken by the population at an earlier period than that now mentioned. This, however, is a state of things by no means likely to arrive. On the contrary, there is every reason to hope and to expect that the improvements which of late years have been begun in the processes of husbandry, are very far from having reached their utmost limit. Even in England, where the advances hitherto made have been so great as to place our farmers before those of many other countries, much may yet be done by introducing the profitable practices of some districts into the remaining parts of the kingdom, and by the consolidation of small holdings into farms of greater size, in the hands of men possessed of both capital and intelligence, as well as by the probable discovery of still superior methods of culture, through the labours of experimentalists and the researches of men of science. It has been recently affirmed, that in Wales the country does not produce half of what it is capable of producing; and that if all England were as well cultivated as Northumberland and Lincoln, it would produce more than double the quantity that is now obtained. We have seen that out of 236,343 males, 20 years of age, who were occupiers of land in England in 1831, the large proportion of 94,883 employed no labourers, while the remaining number of occupiers (141,460) employed among them only 744,407, being in the proportion of 5¼ labourers to each farmer. This shows that a considerable number of their holdings must have been of small extent, and that consequently the amount of capital and knowledge requisite for the full development of the powers of the soil was not applied to it. The proportion of labourers required for the efficient cultivation of a given extent of land must of course vary with local circumstances, such as the nature of the soil and the uses to which it is applied. It has been stated by a good practical authority, that "three labourers to 100 acres are a full complement," but that many persons whose means are circumscribed do not employ more than two labourers for tilling that extent of land.

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* This calculation proceeds upon the supposition that not any of the land inclosed was previously cultivated; which, however, is far from having been the case.

In Scotland, where, within the experience of the present generation, the most marked improvement has been effected in agriculture, the evil just pointed out still exists in a much greater degree than in England. In 1831, of 79,853 males, 20 years of age, occupiers of the soil, 53,966, being more than two-thirds of the number, did not employ labourers, while the 25,887 who did not depend wholly upon the labour of their own hands for tilling the land, gave employment to no more than 87,292 labourers, being only 3⅜ labourers to each holding. In Ireland, the system of parcelling out the land to numerous cottiers, whose scanty means do not enable them to grow more than suffices for their own consumption, while the stipulated rent is frequently paid by labour and not in money, prevails to an extent which renders it one of the most fruitful sources of misery to that country. Out of 108,608 males, 20 years old, occupying land in Ireland in 1831, more than three-fourths (87,819) came under the class just described. On the other hand, those few farmers who employ the labour of others do so to a greater extent, on the average, than English farmers, the proportion being 7$\frac{4}{5}$ labourers to each farmer.

The distinction drawn in 1831 between the occupiers of land who do and those who do not employ labourers was not made at either previous census, so that we have no means of judging by such an indication of the progress of agricultural improvement; but it is well known that the tendency of late years—at least in England and Scotland—has been to enlarge the size of farms, and to place them under the charge of men possessed of capital, who have enjoyed a degree of instruction beyond that which fell to the lot of farmers in those days, the departure of which is so ignorantly deplored by the poet,

> "When every rood of ground maintain'd its man."

By the employment of means such as have here been indicated, there can be no doubt that for a much longer period than twenty years, the soil of these islands will continue to yield the largest proportion of the food of the inhabitants; and when at length the increase of population shall have passed the utmost limit of production, there can be no reason to doubt that we shall still obtain, in full sufficiency, the food that we shall require. The limited extent of cultivable land necessarily limits also the number of labourers employed upon it; the additional hands will consequently have to betake themselves to the manufacture of articles desired in other countries, where a different order of things will exist, and those hands, if there were no obstacle to the admission of foreign grain, would be as effectually engaged in producing food, when employed in the cotton-mills of Lancashire, and the iron-mines of Yorkshire and Staffordshire, as if their industry were applied directly to the cultivation of the soil.

Whether, under such circumstances, it would be considered proper, or indeed possible, by the legislature to continue to afford what is called protection to the native agriculturist, at the expense of the rest of the community, or what the amount of that protection, if any, should be, are questions, the discussion of which does not fall within the intention of this work.

It has been seen that the meadows and pastures of the United Kingdom amount to 27,000,000 of acres, or about three-fifths of the land hitherto brought under cultivation. The whole of this meadow and pasture land, with the exception of that part required for the production of fodder and pasturage for horses used for pleasure or for trading purposes, is used equally with arable land for the production of human food.

A very general opinion now prevails, that by means of the extension of rail-roads throughout the country, a large proportion of the pasture land here spoken of, as well as that important portion of the arable land which at present is employed in raising grain for horses, will be rendered more directly available than at present for the service of man. It is said that the successful establishment of the rail-road between Liverpool and Manchester, a distance of little more than 30 miles, has had the effect of dismissing from employment 1000 horses. The great extent and peculiar nature of the traffic between the two towns here mentioned will not justify the expectation of a similar saving through the establishment, in other quarters, of rail-roads of the like extent; but the saving from this source would certainly be productive of some effect, in placing at a somewhat greater distance, than would otherwise be the case, the time when the United Kingdom will cease to produce the principal part of the food of its inhabitants. It is not necessary for us, in order to convince ourselves of this, to adopt any of the extravagant calculations which have been offered upon the subject. The tendency towards exaggeration in the estimate of prospective advantage is at all times great, and it appears to amount almost to a moral necessity that projectors should deceive themselves upon such points. Against the effects of such exaggerations proceeding from persons of that class, the public mind is usually pretty well preserved, but the mischief becomes of a more serious nature when extravagant estimates are advanced and supported by such a body as a Committee of the House of Commons, the members of which are called upon to form a calm and reasonable judgment on the testimony brought before them by interested or over-sanguine parties, while their knowledge of the subjects submitted to their investigation ought to be such as should at least preserve them from the adoption and advocacy of any very glaring absurdities. In the Report lately presented by the Committee appointed to inquire into the subject of rail-roads, it is gravely stated that the effect of constructing rail-roads between the principal towns of the kingdom would be to render unnecessary no fewer than a million of horses*. A very slight examination of the documents bearing upon this question, within their reach, would have sufficed to preserve the Committee from hazarding so extravagant an assertion. The extent of turnpike-roads in Great Britain, as they existed in 1829, amounted to 24,541 miles; and if the whole of those roads were converted into rail-roads, and the traffic upon every part of them were fully equal to that already mentioned as the estimate for the Liverpool and Manchester line, the number of horses that would by such means be rendered superfluous would amount to only 785,312. It would be greatly beyond the mark to estimate the saving at one-fourth of this number, or less than one-fifth of the million stated in the Committee's Report. But much more direct means of testing the accuracy of the Committee's estimate were at hand, furnished by the detailed returns made from the tax-office of the number of horses in respect of which assessed duties were charged in 1832, and which, including that description of farm horses not wholly used in husbandry upon which the duty is still retained (124,076), amounted to no more than 502,148. However much the rail-road system may be extended, it is certain that a very large proportion of these animals must still be kept. Nearly all those employed for pleasure, and for the internal trade of towns, as well as the whole of those used on farms, would be continued.

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* In some cases where rail-roads have been opened, it has been found that although the use of horses has been discontinued upon the direct line, the increased traffic has made it necessary to employ, for bringing travellers to the rail-road, as great a number of horses as had been displaced.

There are not any documents from which the number of horses kept in this country can be ascertained. The elements for such a computation, which never were very complete, have of late years been rendered much less so, through the repeal of the taxes levied upon horses used for various employments. These taxes having existed up to 1822, a statement is here given of the number of each description of horses charged to the duty in 1821, with the numbers for 1833 of horses in respect of which the tax is continued:—

Horses used for Riding, or drawing Carriages.	1821.		1833.	
	Number of Persons Assessed.	Number of Horses kept.	Number of Persons Assessed.	Number of Horses kept.
Persons keeping 1 . .	117,017	117,017	121,767	121,767
,, 2 . .	28,086	56,172	30,966	61,932
,, 3 . .	11,004	33,012	10,739	32,217
,, 4 . .	6,144	24,576	5,963	23,852
,, 5 . .	3,410	17,050	3,170	15,850
,, 6 . .	2,394	14,364	2,038	12,228
,, 7 and 8	2,532	18,990	2,269	17,017
,, 9 . .	648	5,832	571	5,139
,, 10 to 12	1,635	17,985	1,322	14,542
,, 13 to 16	541	7,844	715	10,368
,, 17 . .	102	1,734	85	1,445
,, 18 . .	54	972	90	1,620
,, 19 . .	95	1,805	76	1,444
,, 20 & up.	1,128	22,560*	1,252	25,040*
Total number charged progressively . .	. .	339,913	. .	344,461
Horses lent to hire .	. .	1,616	. .	2,136
Race-horses	. .	579	. .	1,007
Horses not exceeding 13 hands high . .	. .	11,536	. .	24,899
Horses rode by farming bailiffs	. .	1,010	. .	1,341
Horses rode by butchers	. .	3,631	. .	4,351
Horses not wholly used in husbandry . .	. .	135,542	. .	121,043
		493,827		499,238
Horses used in husbandry, charged at various rates of duty, according to the rent of the farm, &c., and which have been repealed in and since 1822	. .	832,726		
Total number upon which duties were charged . . .	. .	1,326,553		

* These numbers are computed at no more than 20 horses for each assessment. Some small addition should be made to the aggregate numbers on that account.

It appears from this table, that of the horses liable to the duty there are not more than 370,000, out of which the saving contemplated by the Committee can be made. But the returns from the Tax-office do not include horses used in posting, in stage-coaches, mail-coaches, or hackney-coaches. The duties paid by the owners of these animals are collected by a different department of the revenue, and the duty being calculated upon the amount of work performed, no return is made of the number of the horses kept by each employer. In Middleton's survey of Middlesex, the number of such horses was estimated at 100,000 for the whole of England and Wales; Mr. M'Culloch states, as the result of more recent inquiries, that "if the number of such horses in Great Britain is now estimated at 125,000, we shall be decidedly beyond the mark." If to these are added the horses now employed in conveying goods by waggons from one town to another, it appears hardly possible to imagine that the establishment of rail-roads to the utmost extent which is practicable will supersede the employment of 100,000 horses, although the extension of traffic to which the alteration of system may give rise will very probably cause the employment of locomotive power to a greater extent than the animal power which it will displace.

CHAPTER II.

MANUFACTURES.

WOVEN, &c. FABRICS.

Manufacturing skill of England—Its political consequences during the last war—Introduction of woollen manufacture—Prohibition to export English wool—Removal of prohibition, and its consequences—Woollen goods exported—Number of Woollen factories—Foreign wool imported—Production of wool in England in 1800, 1828, and 1836—Stuff trade—Cotton manufacture—Cotton imported since 1800—Cotton goods exported since 1820—Decreasing cost of yarn—Advantages of power-looms—Cost of weaving—Number of power-looms—Hand-loom weavers—Labour employed in spinning and weaving factories—Diminished proportion required to produce equal effects—Increased proportion of power-weaving—Progressive extension of cotton factories—Power-looms in various manufactures—Cotton-printing—Effect of removing duty on printed goods—Hosiery—Bobbin-net—Extent and value of cotton manufacture in 1833—Silk manufacture—Its progress during and since prohibition—Export of silk goods—Distribution of silk factories, and number of persons employed in 1835—Linen manufacture—Quantities exported—Flax-spinning—Prices of yarn and canvass at different periods—Wages—Improvements in spinning—Importations of flax—Distribution of flax factories, and number of persons employed in 1835.

ENGLAND has long stood pre-eminent for the skill of its inhabitants in manufactures of various kinds. But for that skill, and the extraordinary degree of developement which it has experienced during the past half century, it is not possible to conceive that this country could have made the financial efforts which enabled us to carry on the long, and, beyond all precedent, the expensive war of the French Revolution. It has been a common assertion with a very powerful class in the community, that the extraordinary efforts here alluded to were principally, if not entirely, made at the expense of the proprietors of the soil. This position can only be rendered tenable by showing that the condition of those proprietors during the war was one of privation and sacrifice, whereas it is notorious that the direct contrary of such a state of things was experienced; that through the enhanced prices of all kinds of agricultural produce, rents were more than doubled; and that the landlords were thence enabled to assume a scale of expensive living, to continue which, after the return of a more natural order of things, they have had recourse to restrictions upon the importation of food, which have been felt as an injury by all other classes, although they may not have been equally successful in perpetuating high rents and prices.

It is to the spinning-jenny and the steam-engine that we must look as the true moving powers of our fleets and armies, and as the chief support also of a long-continued agricultural prosperity. The views developed in the preceding pages go far to show that it is owing to the effects of these powerful agents in providing employment for a large proportion of our rapidly increasing population, that the system under which the introduction of human food into this country is regulated or restricted, is capable of producing, in any degree, that higher scale of prices, as compared with other countries, which the agriculturists of Great Britain receive for their produce. Restore to their former proportions the numbers of the people who live by agricultural employments, and of those who live by manufacturing industry, while at the same time you retain the increased productiveness of the soil, and it would not be long before the prices of farming produce would fall at least to the level of the prices of surrounding countries. So long as the disproportion of the two classes is maintained at its present rate, it is probable that England will continue a non-exporting country in regard to provisions, and that the prices of food, if even the utmost freedom of importation were allowed, will always be greater here than in neighbouring kingdoms, by all the cost of transport, enhanced by the ordinary profits of trade.

The manufacture of woollen goods is said to have been introduced into this country by the Romans; but the tradition is not confirmed by any certain records. There is no doubt that broad-cloths were made in England as early as the close of the twelfth or beginning of the thirteenth century; but the Flemings were at that time far more advanced in the art than our countrymen, and a considerable part of the cloths then, and for a long time afterwards, worn in this country, were made in Flanders, from wool the produce of English flocks.

From a very early period the woollen manufacture has been an object of the especial protection of the English government. Originally, indeed, the freest exportation of British wool was allowed; but in 1660 it was strictly prohibited, and this law remained in force until 1825. The prohibition was grounded upon the belief that the long-staple or combing-wool of England is superior for some manufacturing purposes to that of any other country, and that by keeping the raw material at home we should secure to ourselves the exclusive manufacture of certain fabrics. The mistaken policy of this selfish system has been rendered fully apparent since its abandonment. No sooner were the French manufacturers able to procure the combing-wool of England than they set their ingenuity at work to profit fully from the concession, and produced new stuffs from English wool superior to any that we had ever produced in this country. Thus stimulated, our manufacturers also applied themselves to the discovery of superior processes, and in the course of a very few years have produced merinos and other stuffs in every respect equal to the fabrics of France. By this means our stuff manufacture has received an important impetus. In the five years from 1820 to 1824, while the prohibition to export English wool was in force, the average annual shipments of that description of woollen goods amounted to 1,064,441 pieces. In the five years following, during which the removal of the restriction occurred, the average annual export of such goods amounted to 1,228,239 pieces; and in the next quinquennial period, from 1830 to 1834, the average rose to 1,505,993 pieces: thus furnishing a satisfactory answer to those persons who predicted, as the necessary consequence of a departure from a restrictive policy, the absolute ruin of that branch of our export trade. In 1337, with the intention of insuring to the manufacturers the full advantage of the home market, an act was passed forbidding any one to wear cloths of foreign manufacture; but this law, which was never very strictly enforced, was soon after repealed.

The value of woollen goods exported from England in 1700 was about 3,000,000*l*. At the beginning of the present century, notwithstanding the great extent to which articles made of cotton had in the intermediate time been substituted for woollen clothing, the value of our exports of woollen goods amounted to about double that sum. We have not any record of the quantity of goods exported at these periods, but as the price of wool at the end of the last century was more than double what it had been at the beginning, it is probable that the number of yards and pieces sent away was not much, if at all, greater at the later than it had been at the earlier period. It will be seen from the following table that the value of our exports of woollens has not become greater since the beginning of this century; but owing to the diminished price of wool, and the great economy that has been attained in various manufacturing processes, the quantities have, on the whole, considerably increased. The largest export, in point of value, that ever took place, occurred in the year 1815, when, owing to the interruption of intercourse with the United States of America in the two preceding years, the quantities sent to that country were unusually great. The number of pieces exported to all parts in that year was 1,482,643, the number of yards 12,173,515, and the total value 9,381,426*l.*, of which 4,378,195*l.* was sent to the United States.

An Account of the Quantities of British Manufactured Woollen Goods Exported in each year, from 1815 to 1834.

Years.	Cloths of all sorts.	Napped Coatings, Duffels, &c.	Kerseymeres.	Baizes of all sorts.	Stuffs, Woollen or Worsted.	Flannel.	Blankets and Blanketing.	Carpets and Carpeting.	Woollens, mixed with Cotton.	Hosiery.	Sundries unenumerated.	Total declared Value.
	Pieces.	Pieces.	Pieces.	Pieces.	Pieces.	Yards.	Yards.	Yards.	Yards.	Dozens.	£.	£.
1815	638,369	88,588	92,691	69,687	593,308	7,056,271	3,397,187	793,793	926,264	202,900	265,200	9,381,426
1816	467,222	90,481	91,183	50,038	585,842	3,592,331	1,934,469	820,038	764,435	119,465	182,461	7,842,768
1817	478,378	93,329	83,493	61,174	683,448	2,814,101	2,305,565	642,586	851,874	100,385	147,373	7,173,735
1818	446,872	78,525	104,468	58,578	937,944	4,621,860	2,706,904	1,144,330	824,848	161,217	170,497	8,140,767
1819	340,044	60,374	71,643	39,796	717,581	3,622,761	1,777,719	620,630	495,557	101,473	82,909	5,984,130
1820	288,700	59,644	78,944	37,183	828,901	2,569,105	1,288,409	526,124	407,716	59,960	39,337	5,586,138
1821	375,464	69,622	91,402	41,610	1,022,342	3,504,851	1,424,238	764,922	627,800	107,779	38,986	6,462,866
1822	420,497	67,757	95,870	43,447	1,078,428	4,503,612	1,926,711	884,922	1,120,326	136,597	47,042	6,488,167
1823	356,027	54,226	94,344	41,539	1,150,133	4,311,997	2,131,632	778,426	918,469	106,420	44,619	5,636,586
1824	407,720	51.585	108,012	47,105	1,242,403	3,105,961	1,990,041	848,842	1,393,443	113,123	43,361	6,043,051
1825	384,880	45,268	126,448	47,100	1,138,808	2,959,594	2,162,834	888,324	1,793,301	106,498	45,335	6,185,648
1826	328,559	41,800	86,038	36,862	1,125,308	2,423,120	1,082,582	903,597	531,517	71,922	37,223	4,966,879
1827	371,965	51,690	122,049	47,574	1,258,667	2,518,887	1,899,600	1,195,939	846,768	148,117	43,559	5,245,649
1828	335,042	40,646	84,524	49,567	1,310,853	2,539,766	2,097,542	1,197,947	981,152	159,463	48,314	5,069,741
1829	363,075	16,186	33,465	52,777	1,307,558	1,572,920	1,839,961	811,538	1,074,077	91,285	41,948	4,587,603
1830	388,269	22,377	34,714	49,164	1,252,512	1,613,099	2,176,391	672,869	1,099,518	111,146	54,038	4,728,666
1831	436,143	13,892	29,650	30,259	1,487,404	1,572,558	2,546,328	678,656	1,000,004	143,774	64,648	5,232,013
1832	396,661	23,453	40,984	34,874	1,800,714	2,304,750	1,681,840	690,042	1,334,072	152,810	55,443	5,244,478
1833	597,189	19,543	31,795	45,036	1,690,559	2,055,072	3,128,106	667,377	1,605,056	232,766	78,236	6,294,432
1834	521,214	22,868	23,891	43,338	1,298,775	1,821,394	2,537,772	606,912	1,723,069	173,063	75,841	5,736,870

The following table will show the countries to which the exports were made in 1834:—

An Account of the Quantities of British Manufactured Woollen Goods Exported from the United Kingdom, distinguishing the Countries whereto the same were Exported, in the year 1834.

COUNTRIES.	Cloths of all Sorts.	Napped Coatings, Duffels, &c.	Kerseymeres.	Baizes of all Sorts.	Stuffs, Woollen or Worsted.	Flannel.	Blankets and Blanketing.
	Pieces.	Pieces.	Pieces.	Pieces.	Pieces.	Yards.	Yards.
Russia . . .	4,187	. .	571	30	26,498	12,562	11,212
Sweden . . .	43	. .	60	. .	7,109	544	620
Norway . . .	445	216	43	40	3,466	4,044	615
Denmark . .	39	22	10	. .	674	2,280	900
Prussia . . .	6	. .	1	. .	36	470	911
Germany . . .	12,182	5,511	8,709	253	332,158	347,646	7,040
United Netherlands . . .	2,804	15,050	1,662	13,186	118,869	410,901	11,325
France . . .	342	160	100	. .	22,173	31,004	1,450
Portugal, Azores, and Madeira .	28,610	246	783	8,713	34,671	21,026	33,391
Spain and the Canaries . .	1,023	14	694	486	22,410	4,912	3,840
Gibraltar . .	2,098	78	275	112	1,357	5,300	3,010
Italy	11,895	. .	930	52	107,515	41,189	4,092
Malta	1,685	. .	284	. .	2,411	1,574	1,080
Ionian Islands .	129	128	38	4	411	2,450	320
Turkey and Continental Greece	1,618	255	78	5	6,808	19,069	2,176
Morea and Greek Islands . .	13	10	4	. .	750	1,100	. .
Isles of Guernsey, Jersey, Alderney, and Man . . .	2,529	60	7	251	3,145	55,659	11,207
East Indies and China . . .	116,390	5	1,473	77	77,983	181,963	66,660
New Holland .	4,787	5	326	94	5,303	68,322	149,238
Cape of Good Hope . . .	3,781	700	463	809	5,796	43,089	28,336
Other parts of Africa . . .	544	1	75	57	3,355	8,489	9,910
British N. American Colonies	33,501	178	566	631	30,854	348,151	241,140
British W. Indies	10,140	202	224	5,739	10,195	50,433	163,548
United States of America . .	200,004	25	3,537	39	342,323	112,051	1,429,449
Foreign W. Indies	12,557	. .	39	659	12,413	7,894	212,058
Brazil	23,862	. .	620	10,706	34,756	8,490	119,344
Mexico, & States of S. America	46,000	2	2,319	1,395	35,331	30,774	24,900
Total . .	521,214	22,868	23,891	43,338	1,298,775	1,821,394	2,537,772
Total in 1833 .	597,189	19,543	31,795	45,036	1,690,559	2,055,072	3,128,106

An Account of the Quantity of British Manufactured Woollen Goods Exported, &c.—*Continued.*

COUNTRIES.	Carpets and Carpeting.	Woollens mixed with Cotton.	Hosiery, viz. Stockings, Woollen or Worsted.		Sundries, consisting of Hosiery not otherwise described—Rugs, Coverlids, Tapes, and Small Wares.			Declared Value of British Woollen Manufactures Exported from the United Kingdom.		
	Yards.	Yards.	Dozens.	Prs.	£.	s.	d.	£.	s.	d.
Russia . . .	9,929	4,800	359	0	274	0	0	105,403	0	0
Sweden . . .	1,230	180	142	0	30	0	0	10,284	19	6
Norway . . .	322	8,930	1,130	6	126	3	0	13,554	4	0
Denmark . .	1,666	1,613	289	0	98	9	10	2,434	17	4
Prussia . . .	129	. .	3	0	10	0	0	305	15	0
Germany . . .	41,540	185,865	5,470	0	6,396	5	0	565,950	15	0
United Netherlands . . .	63,296	185,647	24,788	15	3,982	16	0	388,907	17	6
France . . .	6,802	55,145	383	0	192	0	0	45,252	15	0
Portugal, Azores, and Madeira .	9,142	84,302	984	0	1,809	2	6	270,750	7	6
Spain and the Canaries . .	1,360	57,830	81	0	158	10	0	67,526	14	0
Gibraltar . .	3,471	46,752	306	8	1,045	0	0	24,173	3	9
Italy	40,036	220,749	2,365	0	1,185	15	0	252,243	5	0
Malta	900	16,320	429	0	260	0	0	13,509	0	0
Ionian Islands .	650	615	224	0	65	0	0	3,707	10	0
Turkey and Continental Greece	11,943	2,606	108	0	402	10	0	29,339	5	0
Morea and Greek Islands . .	8	. .	. .		2	0	0	1,722	0	0
Isles of Guernsey, Jersey, Alderney, and Man . . .	15,387	100	306	8	2,533	9	0	40,353	12	6
East Indies and China . . .	9,495	39,590	823	6	982	5	7	885,163	8	2
New Holland .	7,149	14,900	3,363	6	3,326	8	0	66,262	17	1
Cape of Good Hope . . .	2,964	5,849	1,471	0	780	5	0	39,428	19	7
Other parts of Africa . . .	2,632	640	461	0	1,212	17	6	15,845	3	11
British N. American Colonies	71,622	28,674	17,880	10	12,656	0	4	268,354	8	10
British W. Indies	938	13,064	1,747	0	8,116	18	6	102,307	13	7
United States of America . .	246,298	27,425	249	0	6,303	0	0	1,726,934	1	6
Foreign W. Indies	8,683	450,336	102,199	4	15,903	8	0	99,551	8	0
Brasil	2,879	99,949	1,088	0	4,041	0	0	268,300	0	0
Mexico, & States of S. America	46,491	171,188	6,420	0	4,003	5	0	427,803	10	0
Total . .	606,912	1,723,069	173,063	3	75,841	8	3	5,736,870	11	0
Total in 1833 .	667,377	1,605,056	232,766	1	78,236	12	5	6,294,432	3	9

It is not possible to measure the progress of this branch of manufacture by means of the export trade, which is of far less magnitude than the home demand; nor can we arrive at any precise estimate from the quantities of the raw material which have been procured from abroad, since foreign wool has always formed only a small proportion of the material used for our cloth manufactures. Neither does the growth of the population of particular towns and districts always furnish a certain criterion for forming a judgment upon the subject, because the manufacture, which was at first spread about in a great many different parts of the kingdom, has at different times diminished or ceased in some places, while it has increased in others, and in general the business has been carried on in districts where other branches of industry have been simultaneously prosecuted; so that it is not possible always to determine the degree in which the increase of manufacturing hands is occasioned by one particular branch or by another.

The total number of woollen factories, and of the persons employed in them, who form, however, only a small part of those engaged in the woollen manufacture, is thus given in a late return (1835) by the Inspectors of Factories:—

Statement of the Number of Woollen Factories in operation in the different parts of the United Kingdom, with the Number and Ages of the Persons employed therein.

COUNTIES, &c.	Number of Factories.		Between 8 and 12 Years.		Between 12 and 13 Years.		Between 13 and 18 Years.		Above 18 Years.		Total Number of Persons employed.		
	At Work.	Empty.	Males.	Fem.	Males.	Fem.	Males.	Fem.	Males.	Fem.	Males.	Fem.	Total.
ENGLAND.													
Chester	15	. .	23	22	10	9	32	18	121	30	186	79	265
Cornwall . . .	9	. .	2	7	. .	20	2	51	16	103	20	181	201
Cumberland . .	15	. .	29	20	20	10	45	41	87	19	181	90	271
Derby	5	. .	. .	. .	3	4	15	14	108	27	126	45	171
Devon	36	. .	64	98	28	94	41	326	181	583	314	1,101	1,415
Dorset	4	. .	. .	1	12	5	12	11	38	28	62	45	107
Durham . . .	5	. .	29	35	19	16	22	77	16	108	86	236	322
Gloucester . . .	118	. .	69	55	419	300	1,076	853	2,591	2,610	4,155	3,818	7,973
Hants	2	. .	. .	. .	. .	3	1	8	4	6	5	17	22
Hereford . . .	2	. .	6	. .	. .	1	1	1	6	4	13	6	19
Kent	1	. .	. .	4	. .	2	. .	4	4	3	4	13	17
Lancaster . . .	106	. .	240	284	318	272	705	656	1,775	816	3,038	2,028	5,066
Leicester . . .	21	. .	37	21	42	61	104	192	304	444	487	718	1,205
Lincoln	1	. .	2	3	. .	6	3	10	4	1	9	20	29
Middlesex . . .	2	. .	1	. .	. .	. .	12	. .	17	. .	30	. .	30
Monmouth . . .	3	. .	2	3	1	1	3	1	7	2	13	7	20
Norfolk	5	. .	15	3	21	13	35	39	26	46	97	101	198
Northampton . .	2	. .	. .	. .	8	19	15	15	8	5	31	39	70
Carried forward	352	. .	519	556	901	836	2,124	2,317	5,313	4,835	8,857	8,544	17,401

Statement of the Number of Woollen Factories, &c.—*Continued.*

COUNTIES, &c.	Number of Factories.		Between 8 and 12 Years.		Between 12 and 13 Years.		Between 13 and 18 Years.		Above 18 Years.		Total Number of Persons employed.		
	At Work.	Empty.	Males.	Fem.	Males.	Fem.	Males.	Fem.	Males.	Fem.	Males.	Fem.	Total.
ENGLAND.													
Brought forward	352	. .	519	556	901	836	2,124	2,317	5,313	4,835	8,857	8,544	17,401
Northumberland .	3	. .	6	6	1	1	5	4	13	4	25	15	40
Oxford	9	. .	12	4	24	22	47	54	131	19	214	99	313
Salop	3	. .	. .	. .	6	14	8	11	28	33	42	58	100
Somerset . . .	36	. .	80	32	128	58	323	216	612	442	1,143	748	1,891
Stafford . . .	3	. .	3	. .	4	4	10	27	54	41	71	72	143
Surrey	6	. .	1	. .	8	. .	20	1	35	2	64	3	67
Warwick . . .	5	. .	1	1	7	15	7	39	69	57	84	112	196
Westmoreland .	14	. .	37	36	19	29	58	56	152	41	266	162	428
Wiltshire . . .	63	. .	73	39	176	75	670	243	1,136	838	2,055	1,195	3,250
Worcester . . .	6	. .	. .	. .	11	53	25	172	142	331	178	556	734
York, West Riding	601	9	1,583	1,484	2,651	2,728	6,198	6,924	10,926	8,396	21,358	19,532	40,890
„ East Riding	1	. .	2	. .	. .	. .	2	. .	2	2	6	2	8
Total, England .	1,102	9	2,317	2,158	3,936	3,835	9,497	10,064	18,613	15,041	34,363	31,098	65,461
„ Wales . .	85	. .	47	29	119	61	164	101	198	66	528	257	785
„ Scotland .	90	. .	104	77	210	332	315	698	1,083	686	1,712	1,793	3,505
„ Ireland .	36	. .	13	19	25	40	162	249	674	341	874	649	1,523
Total, United Kingd-	1,313	9	2,481	2,283	4,290	4,268	10,138	11,112	20,568	16,134	37,477	33,797	71,274

By taking into the estimate the whole of the points that have been indicated, a tolerably correct opinion may perhaps be formed upon the subject. We have not any detail of the quantity of woollen goods exported earlier than 1815, and without such data the simple statement of value affords no precise knowledge of the extent of shipments of goods produced from a material, the qualities of which are so various, and the prices of which have so greatly fluctuated. There is not any reason for supposing that the number of sheep kept in this country has fallen off in proportion to the growth of the population, but it is, on the contrary, believed that the great increase of town population has caused a larger proportionate consumption of mutton than formerly, which consumption has been met through the introduction of the turnip husbandry; and if there is any foundation for such an opinion, it follows that the quantity of wool annually furnished by our own flocks must have increased, while we know that a very great augmentation of our imports of foreign wool has taken place. The quantity imported, in each year of the present century, has been as follows:—

	Pounds.		Pounds.
1801	7,371,774	1818	24,749,570
1802	7,669,798	1819	16,100,970
1803	5,904,740	1820	9,775,605
1804	7,921,595	1821	16,622,567
1805	8,069,793	1822	19,058,080
1806	6,775,636	1823	19,366,725
1807	11,487,050	1824	22,564,485
1808	2,284,482	1825	43,816,966
1809	6,758,954	1826	15,989,112
1810	10,914,137	1827	29,115,341
1811	4,732,782	1828	30,236,059
1812	6,983,575	1829	21,516,649
1813	records destroyed by fire.	1830	32,305,314
		1831	31,652,029
1814	15,492,311	1832	28,142,489
1815	13,640,375	1833	38,076,413
1816	7,517,886	1834	46,455,232
1817	14,061,722	1835	42,604,656

In consequence of a continual depression in the price of British wool, a Committee of the House of Commons was appointed in 1828, to inquire into the state of the woollen trade, and a considerable amount of evidence on the subject was collected on that occasion. The estimates offered to the Committee were indeed without the sanction of any certain authority; but as their general accuracy seems to have been acknowledged at the time by many persons practically experienced in this branch of trade, we are justified in availing ourselves of them, in the absence of more precise data.

On that occasion a statement made by Mr. Luccock was produced, giving the estimated numbers of sheep kept in England and Wales in the year 1800, and distinguishing the long-woolled from the short-woolled flocks. According to this statement the number of sheep in that year amounted to 19,007,607, and of these the far greater proportion, namely, 14,854,299, were short-woolled sheep. The quantity of wool yielded by these animals was estimated at 393,236 packs of 240 pounds, or 94,376,640 pounds in all, being a very small fraction under five pounds for each fleece, taking one with another. Mr. Hubbard, a gentleman of great experience in the wool trade, by whom Mr. Luccock's table was brought forward in 1828, then expressed his belief that the actual number of sheep in England and Wales had increased one-fifth since 1800; that the long-woolled sheep had become more numerous than the short-woolled; and that the weight of the fleece had so much increased, that, one with another, each sheep yielded more than 5¾ pounds of wool.

Assuming these estimates to be correct, it appears that in 1800 the quantity of wool available for manufacturing purposes, exclusive of that produced in Scotland and Ireland, was—

	Packs.	Pounds.
From flocks in England and Wales,	393,236, or	94,376,640
Foreign wool imported		8,609,368
Together		102,986,008

If between 1800 and 1828 the number of sheep had increased one-fifth, it is probable that by this time the increase has reached to one-fourth, and that the whole number in England and Wales now amounts to 23,759,509. Assuming further, that the increased average weight of each fleece is increased in the degree estimated by Mr. Hubbard, the whole quantity of wool now applicable to manufacturing purposes must be—

	Packs.	Pounds.
From flocks in England and Wales,	569,238, or	136,617,120
Foreign wool imported		42,604,656
Together		179,221,776

Showing an increase since 1800 of nearly 80 per cent.

During this interval the manufacture has increased in a considerable degree in Yorkshire. That branch of it which depends on long or combing wool—of which the quality in England is so superior to that of every country, that we may be said to possess a natural monopoly of it—is chiefly prosecuted in and near the town of Bradford in that county. The extension of the stuff and worsted trade of this country may fairly be estimated from the increase of the population in the parish of Bradford, which is stated in the government returns to have been as under:—

1801 . .	29,704
1811 . .	36,358
1821 . .	52,954
1831 . .	76,996

Since the last-mentioned year, the town of Bradford has been very greatly enlarged. In one year alone

(1833), 700 new houses were built and occupied, and the number of factories has been increased in proportion.

During the early part of the present century, the manufacture of bombazeens at Norwich suffered a very great depression, which was shown by the trifling increase in the population between 1801 and 1811. After the latter year this branch of trade recovered in a remarkable degree, and with its prosperity the population experienced a rapid increase, the difference in numbers between 1811 and 1821 having been 38 per cent., and between 1821 and 1831 21½ per cent. For reasons already given, this method of showing the extension of other branches of the woollen manufacture is not equally available; but when it is seen, that since the beginning of the century the population of the principal clothing towns in Yorkshire has been doubled, this fact must be taken as a strong corroboration of the opinion already expressed as to the general prosperity of the manufacture.

	1801.	1831.
Population of Halifax	63,434	109,899
,, Huddersfield	14,848	34,041
,, Leeds	53,162	123,393
,, Rochdale	39,766	74,427
	171,210	341,760

The increase in the population of the whole West Riding of Yorkshire, the chief seat of the woollen manufacture in England, was, between 1801 and 1831, from 563,953 to 976,400, or 73 per cent.

In the interval between the periods here contrasted the woollen manufacture has undergone various changes. One of the greatest of these changes has resulted from improvements in the breed of English sheep, in which it has been more the object to obtain a greater weight of carcass than to improve or preserve the quality of the wool. The fleece, as we have seen, has become heavier, but, at the same time, the wool of the short-woolled sheep is coarser; and for the production of cloth of similar quality to that which thirty years ago was produced wholly from British wool, it is now necessary to use an admixture of imported wool. This remark applies to South Down sheep, the wool of which is used for baizes, flannel, blanketing, druggets, and low-priced cloths. The proportion of these sheep, however, has much diminished relatively to the number of sheep yielding long or combing wool, and which is employed for the manufacture of stuffs and worsted fabrics, a branch of business which has taken a very important stride, and is still increasing in a very rapid manner.

A curious trade has of late years been introduced, that of importing foreign woollen rags into England for the purpose of re-manufacture. These are assorted, torn up, and mixed with English, or more commonly with Scotch wool of low quality, and inferior cloth is made from the mixture at a price sufficiently moderate to command a sale for exportation. By this means a market is obtained for wool of a very low quality, which might otherwise be left on the hands of the growers.

The best blankets are made from unmixed British wool, and this trade has experienced a very great increase. The town and parish of Dewsbury, at which carpets are made, has increased its population, between 1801 and 1831, from 11,752 to 19,854, or 69 per cent.

The great and continually increasing cheapness of cotton manufactured goods has caused them in a great degree to supersede the lower qualities of woollen cloths among the labouring population of England; and as we are less able to rival continental manufacturers of woollens than to maintain our superiority in the spinning and weaving of cotton, it is not probable that, unless new markets shall be opened, any very rapid extension will in future be given to our manufacture of woollen cloths. As regards worsted and stuff goods the case is different; and it has of late been a prevailing opinion among the more intelligent persons engaged in that branch, that our present amount of trade in those goods is trifling compared to what it is likely to become hereafter.

The rise and progress of the cotton manufacture in Great Britain form perhaps the most extraordinary page in the annals of human industry. It is not necessary on this occasion to trace its early growth or to describe the mechanical inventions by means of which it has come to exercise so powerful an influence upon the destinies of the civilized world. It will be sufficient here to describe, by their effects, the gigantic strides which have been made in the cotton manufacture since the beginning of this century, referring those persons who wish for earlier or more detailed accounts to the Memoir of Mr. Kennedy,* the History of Mr. Baines,† and the Essay of Dr. Ure.‡

In the year 1800, the quantity of cotton imported for use into the United Kingdom was 56,010,732 pounds, having been only 31,447,605 pounds in 1790, and

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* Paper on the Rise and Progress of the Cotton Trade, in Vol. III. of the Memoirs of the Manchester Literary and Philosophical Society. 1819.

† History of the Cotton Manufacture in Great Britain, by E. Baines, Jun., Esq. 1835.

‡ The Philosophy of Manufactures, by Dr. Ure. 1835.

17,992,882 pounds in 1785. The total value of manufactured cotton goods exported in 1800 was 5,406,501*l.*, having been 1,662,369*l.* in 1790. At the earliest of these two dates, Sir Richard Arkwright's inventions had very recently been thrown open to the public by the setting aside of his patent in the Court of King's Bench. The first steam-engine constructed for a cotton-mill was made by Mr. Watt in 1785, and put to use at Papplewick in Nottinghamshire; it was four years later that the application of steam power to the same purpose was first made in Manchester. In the year 1800, the number of such engines in that town had increased to 32, the aggregate power of which was estimated as equal to the labour of 430 horses. This increase shows that a great impulse had been given to the manufacture, which already was considered to be a thing of great national importance. If, however, we measure its amount at that time in comparison with the extension which it has since received, the cotton trade of 1800 dwindles into insignificance. At that time the application of the improved machinery was confined to the production of yarn; for although Dr. Cartwright's power-loom was invented as early as 1787, the first practical application of his machine was not made until 1801, when a weaving factory was erected by Mr. Monteith, at Pollockshaws, near Glasgow, and furnished with 200 self-acting looms. Nor was it until after several years had elapsed, that the imperfections and difficulties attendant upon this new speculation were overcome, and that this interesting invention was rendered a profitable instrument in the hands of that enterprising gentleman.

The progress of the manufacture since that time may be seen by inspection of the following table, in which are stated the quantity of cotton annually worked up in the kingdom, and the value of that part of the resulting manufactured goods which was exported:—

Years.	Quantity of Cotton Wool taken for consumption.	Value of Goods Exported.	
		Official.	Real, or Declared.
	lbs.	£.	£.
1801	54,203,433	7,050,809	
1802	56,615,120	7,624,505	
1803	52,251,231	7,081,441	
1804	61,364,158	8,746,772	
1805	58,878,163	9,534,465	
1806	57,524,416	10,489,049	
1807	72,748,363	10,309,765	
1808	41,961,115	12,986,096	
1809	88,461,177	19,445,966	
1810	123,701,826	18,951,994	
1811	90,309,668	12,013,149	
1812	61,285,024	16,517,690	
1813	50,966,000	Records destroyed by fire.	
1814	53,777,802	17,655,378	20,033,132
1815	92,525,951	22,289,645	20,620,956
1816	86,815,021	17,564,461	15,577,392
1817	116,757,526	21,259,224	16,012,001
1818	162,122,705	22,589,130	18,767,517
1819	133,116,851	18,282,292	14,699,912
1820	152,829,633	22,531,079	16,516,748
1821	137,401,549	22,541,615	16,093,787
1822	143,428,127	26,911,043	17,218,724
1823	186,311,070	26,544,770	16,326,604
1824	141,038,743	30,155,901	18,452,987
1825	202,546,869	29,495,281	18,359,526
1826	162,889,012	25,194,270	14,093,369
1827	249,804,396	33,182,898	17,637,165
1828	208,987,744	33,467,417	17,244,417
1829	204,097,037	37,269,432	17,535,006
1830	269,616,640	41,050,969	19,428,664
1831	273,249,653	39,357,075	17,257,204
1832	259,412,463	43,786,255	17,398,392
1833	293,682,976	46,337,210	18,486,400
1834	308,602,401	51,069,140	20,513,585
1835	333,043,464	52,333,278	22,128,304

The quantity taken for consumption previous to 1820 has been found by deducting the quantity exported from the quantity imported in each year. By this method, although the quantity stated in individual years may not be correct, as the stock in hand at the end of each year will of course vary from the stock in hand at the beginning, yet by taking a series of years, one with another, the quantities may be relied on as being substantially right. From 1820 downwards, the quantities stated are those actually taken by the manufacturers in the course of each year.

The circumstance that will first strike any person who consults the foregoing table, is the comparative sluggishness of the trade from the beginning of the century until the return of peace. It has been seen that the effect of the general adoption of Arkwright's invention for spinning was to treble the manufacture in 15 years. At this point it may almost be said to have stopped, and in fact the quantity of raw material manufactured in each of the two last years of the war was smaller than that consumed in 1801. No sooner had peace returned, however, than new life was infused into the trade. In five years the quantity of cotton spun was trebled; in another five years it was four times what it had been in the last year of war; at the expiration of another period of equal duration more than five times that quantity passed through the manufacturers' hands, and the same rate of progression has been since continued, the quantity used in 1835 having been fully six and a half times greater than that used in 1813.

The progress of the export trade in cotton goods has been more regular throughout the period embraced in the table. Judging from the "official value," under which every yard or pound is estimated at an unvarying rate, it appears that the quantity of these goods exported was nearly three times as great at the close of the war as it had been at the beginning of the century—a fact which seems to prove that the capability of the population of this country to command the purchase of this the cheapest kind of clothing, must have diminished, the increased exports having left a much smaller quantity for the use of a population increased in the meanwhile by more than two millions of souls.

It is only of late years that the accounts have been so given as to show the actual quantities of the different descriptions of cotton goods exported. The following statement contains the summary of the shipments in each year from 1820 to 1834:—

Statement of the Quantity and declared Value of British Cotton Manufactured Goods Exported from the United Kingdom, distinguishing the description of Goods, in each year from 1820 to 1834.

Years.	White or Plain Cottons.		Printed or Dyed Cottons.		Hosiery and Small Wares.	Twist and Yarn.		Total Declared Value.
	Yards.	Declared Value.	Yards.	Declared Value.	Declared Value.	Pounds.	Declared Value.	
		£.		£.	£.		£.	
1820	113,682,486	5,451,024	134,688,144	7,742,505	496,580	23,032,325	2,826,639	16,516,748
1821	122,921,692	5,713,722	146,412,002	7,454,243	619,999	21,526,369	2,305,823	16,093,787
1822	151,162,131	6,317,973	150,999,157	7,480,634	722,535	26,595,468	2,697,582	17,218,724
1823	152,184,705	5,884,935	149,631,387	7,095,709	720,014	27,378,986	2,625,946	16,326,604
1824	170,091,384	6,437,817	174,559,749	8,010,432	869,336	33,605,510	3,135,396	18,452,987
1825	158,039,786	6,027,892	178,426,912	8,205,117	919,787	32,641,604	3,206,729	18,359,526
1826	138,159,783	4,477,942	128,897,111	5,388,592	735,497	42,189,661	3,491,338	14,093,369
1827	183,940,186	5,762,576	181,544,618	7,184,459	1,144,552	44,878,774	3,545,578	17,637,165
1828	189,475,956	5,623,802	173,852,475	6,859,447	1,165,763	50,505,751	3,595,405	17,244,417
1829	222,504,344	5,853,625	180,012,152	6,662,623	1,041,885	61,441,251	3,976,874	17,535,006
1830	244,799,032	6,562,397	199,799,466	7,557,373	1,175,153	64,645,342	4,133,741	19,428,664
1831	239,191,261	6,065,478	182,194,032	6,098,035	1,118,672	63,821,440	3,975,019	17,257,204
1832	259,493,096	5,854,924	201,552,407	5,645,706	1,175,003	75,667,150	4,722,759	17,398,392
1833	259,519,864	5,847,840	236,832,232	6,603,220	1,331,317	70,626,161	4,704,024	18,486,401
1834	283,950,158	6,514,173	271,755,651	7,613,179	1,175,219	76,478,468	5,211,015	20,513,586

If the first and last lines of this table are compared, it will be seen, that while the number of yards exported in 1834 is greater by 123 per cent. than the number exported in 1820, the increase in the declared value is no more than 7 per cent.; the average price per yard, which in 1820 was 12¾*d.*, having fallen in 1834 to 6$\frac{1}{10}$*d.* The quantity of twist exported has increased during the same period in the proportion of 10 to 3, while the increase in the declared value is only in the proportion of 13 to 7. The average price of twist in 1820 was 2*s.* 5½*d.*, and in 1833 was not more than 1*s.* 4⅜*d.* per pound. We are thus enabled to form some judgment as to the economy which has been introduced into the process of manufacture during the last 13 years, and are besides able to apportion the degrees of that economy which appertain to the spinning and to the weaving branches of the manufacture respectively. It is necessary, however, that for this purpose the average qualities of both cloths and twist should have been the same at both periods, which it is reasonable to suppose would be the case where the markets are so numerous, and the quantities shipped are so large. The diminution of value in the twist appears to amount to 45¾ per cent., and in the cloth to 51⅓ per cent.: by far the greater part of the saving occurs therefore in the spinning processes—a circumstance which may account for the greater proportionate increase in the shipments of twist and yarn.

An Account of the Quantity and Declared Value of British Cotton Manufactured Goods Exported from the United Kingdom, distinguishing the Description of Goods, and the various Countries whereto the same were Exported, in the year 1834.

tries to which xported.	White or Plain Cottons.		Printed or Dyed Cottons.		Hosiery and Small Wares.	Twist and Yarn.		Total Declared Value.
	Yards.	Declared Value.	Yards.	Declared Value.	Declared Value.	Yards.	Declared Value.	
		£.		£.	£.		£.	£.
. . . . . .	1,234,290	43,208	545,556	23,338	4,212	16,241,363	1,037,533	1,108,291
. . . . . .	28,532	975	23,558	630	590	499,550	30,013	32,208
. . . . . .	199,843	4,865	367,688	9,737	1,925	62,423	3,575	20,102
. . . . . .	242,027	4,220	84,493	2,142	227	23,650	1,317	7,906
. . . . . .	700	30	3,908	190	199	24,342	2,017	2,436
. . . . . .	15,054,644	344,623	35,472,854	948,994	207,105	26,492,890	1,793,458	3,294,180
Holland	9,602,022	227,311	11,587,905	321,773	49,718	13,084,898	1,122,337	1,721,139
Belgium	1,658,650	58,701	2,521,816	97,220	170,012	65,514	8,009	333,942
France	1,531,733	37,080	785,874	23,694	67,385	101,908	22,527	150,686
Portugal, Proper . . .	20,696,664	365,508	21,307,430	534,354	19,895	241,937	19,955	939,712
,, Azores . . .	657,141	13,344	704,018	17,317	914	30,612	1,112	32,687
,, Madeira . . .	253,790	4,899	319,391	7,385	442	89	7	12,733
Spain and the Balearic Islands	168,604	4,126	288,066	8,058	1,053	2,646	350	13,587
Spain and the Canaries .	341,633	7,930	407,036	10,835	581	850	60	19,406
Gibraltar	6,437,458	141,993	6,692,676	170,736	7,927	12,909	1,071	321,727
Italy and the Italian Islands	38,580,072	899,630	22,103,591	663,613	52,844	9,888,968	543,808	2,159,895
Malta	2,704,251	66,228	1,856,252	55,928	1,821	531,840	28,887	152,864
Ionian Islands	966,028	19,138	781,827	17,175	958	129,622	8,888	46,159
Turkey and Continental Greece	17,789,416	470,404	10,832,074	357,841	3,546	1,989,851	109,735	941,526
Morea and Greek Islands	239,300	6,119	221,684	11,374	870	1,581	140	18,503

Egypt (Ports on the Mediterranean)	3,302,596	70,677	626,848	25,197	296	531,714	29,000	126,070
Tripoli, Barbary, and Morocco	513,436	8,096	76,926	1,896	793	. .	. .	10,785
Western Coast of Africa .	414,117	9,228	4,561,316	120,356	607	570	120	130,311
Cape of Good Hope . .	1,969,933	45,688	2,036,378	54,640	9,527	2,370	174	110,029
St. Helena	42,667	1,396	67,705	1,728	321	36	2	3,447
Isle of Bourbon . . .	87,780	1,723	10,460	271	36	. .	. .	2,030
Mauritius	1,100,341	28,779	1,396,004	41,674	6,671	340	34	77.158
East India Company's Territories, and Ceylon .	30,988,532	722,187	7,983,527	221,317	15,717	4,267,653	315,583	1,274,804
China	5,893,631	132,515	487,387	19,880	10,503	952,440	56,839	219,737
Ports of Siam	264,155	5,318	254,870	6,098	30	22,000	1,565	13,011
Sumatra, Java, and other Islands in the Ind. Seas	6,709,349	173,532	3,409,441	117,369	1,863	328,970	17,443	310,207
Philippine Islands . . .	1,154,945	29,336	639,493	24,717	1,146	20,300	1,115	56,314
N. S. Wales, Van Diemen's Land, and Swan River .	2,214,832	52,107	1,509,588	49,594	11,584	11,433	652	113,937
British N. Amer. Colonies	4,973,891	129,127	5,251,501	134,164	20,357	194,692	6,458	290,106
British West Indies . .	13,923,617	311,040	16,322,698	417,716	40,584	5,584	455	769,795
Hayti	2,334,691	71,768	4,832,163	140,819	5,936	4,300	505	219,028
Cuba and other Foreign West Indies	7,625,333	178,464	13,549,253	333,423	13,424	10	1	525,312
United States of America	16,339,033	462,524	29,291,829	931,533	277,652	107,443	6,693	1,678,402
Mexico	1,647,935	62,948	5,176,029	188,229	7,878	463,546	27,364	286,419
Guatemala	565,197	14,726	304,804	9,071	111	23,155	1,775	25,683
Columbia	2,711,036	55,456	2,604,121	58,566	3,262	35,600	3,453	120,737
Brazil	35,569,888	673,143	29,854,444	753,886	58,555	57,730	3,795	1,489,379
States of the Rio de la Plata	11,211,701	208,074	9,730,417	241,757	33,313	9,258	446	483,590
Chili	12,125,052	275,556	11,349,902	330,498	20,814	5,689	860	627,728
Peru	1,251,295	33,112	3,253,197	94,716	8,760	. .	. .	136,588
Isles of Guernsey, Jersey, Alderney, and Man . .	628,387	37,321	267,653	11,730	33,255	6,192	984	83,290
Total	283,950,158	6,514,173	271,755,651	7,613,179	1,175,219	76,478,468	5,211,015	20,513,586

The following statement, which is taken from Mr. Dugald Bannatyne's paper on the cotton manufacture inserted in the "Encyclopædia Britannica," places in a very striking light the reduction that has been effected by machinery in the cost of spinning.

Prices of cotton-yarn, 100 hanks to the lb., in the following years:—

	s.	d.	
1786	38	0	per lb.
1787	38	0	,,
1788	35	0	,,
1789	34	0	,,
1790	30	0	,,
1791	29	9	,,
1792	16	1	,,
1793	15	1	,,
1794	15	1	,,
1795*	19	0	,,
1796	19	0	,,
1797	19	0	,,
1798†	9	10	,,
1799	10	11	per lb.
1800	9	5	,,
1801	8	9	,,
1802	8	4	,,
1803	8	4	,,
1804	7	10	,,
1805	7	10	,,
1806	7	2	,,
1807	6	9	,,
After many fluctuations, in			
1829	3	2	,,
1832	2	11	,,

This subject has had further light thrown upon it by the inquiries of the Factory Commissioners, from whose report the following tables have been extracted:—

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* Spun from Bourbon cotton.

† Spun from Sea Island cotton.

Average Price of Cotton, compared with Twist, at different periods during the present Century.

	Cotton, per lb.	Twist, Sold per lb.	Average No.	Dif-ference.
	d.	d.		d.
From Dec. 1802 to Dec. 1805 . .	19.6	39.8	25.9	20.2
,, ,, 1805 ,, ,, 1806 . .	19.08	36.18	25.	17.1
,, ,, 1806 ,, ,, 1807 . .	21.54	36.70	25.78	15.16
,, ,, 1807 ,, ,, 1808 . .	24.83	38.	24.61	13.17
,, ,, 1808 ,, ,, 1809 . .	26.83	41.91	24.37	15.08
,, July, 1809 ,, ,, 1809 . .	20.73	37.01	24.69	16.28
,, Dec. 1809 ,, July, 1810 . .	20.93	40.79	22.97	19.86
,, July, 1810 ,, Dec 1810 . .	19.75	38.51	22.96	18.76
,, Dec. 1810 ,, July, 1811 . .	17.96	34.40	23.09	16.44
,, July, 1811 ,, Dec. 1811 . .	17.43	28.71	23.59	11.28
,, Dec. 1811 ,, July, 1812 . .	17.81	29.72	23.15	11.91
,, July, 1812 ,, Dec. 1812 . .	18.24	29.09	24.45	10.85
,, Dec. 1812 ,, July, 1813 . .	24.75	35.46	25.22	10.71
,, July, 1813 ,, Dec. 1813 . .	25.12	35.08	25.52	9.96
,, Dec. 1813 ,, July, 1814 . .	33.52	46.92	25.06	13.40
,, July, 1814 ,, Dec. 1814 . .	31.67	45.40	26.	13.73
,, Dec. 1814 ,, July, 1815 . .	25.72	37.48	23.65	11.76
,, July, 1815 ,, Dec. 1815 . .	26.53	38.44	25.	11.91
,, Dec. 1815 ,, July, 1816 . .	20.47	37.74	25.1	17.27
,, July, 1816 ,, Dec. 1816 . .	20.73	33.8	25.3	13.07
,, Dec. 1816 ,, July, 1817 . .	22.3	34.65	25.7	12.35
,, July, 1817 ,, Dec. 1817 . .	20.44	33.6	25.46	13.16
,, Dec. 1817 ,, July, 1818 . .	20.46	34.55	25.6	14.09
,, July, 1818 ,, Dec. 1818 . .	21.13	32.95	23.4	11.82
,, Dec. 1818 ,, July, 1819 . .	14.49	30.85	24.53	16.36
,, July, 1819 ,, Dec. 1819 . .	13.65	27.53	24.95	13.88
,, Dec. 1819 ,, July, 1820 . .	14.44	26.03	25.70	11.59
,, July, 1820 ,, Dec. 1820 . .	11.62	21.40	25.18	9.78
,, Dec. 1820 ,, July, 1821 . .	9.82	20.11	25.73	10.29
,, July, 1821 ,, Dec. 1821 . .	9.91	19.45	25.53	9.54
,, Dec. 1821 ,, July, 1822 . .	9.23	19.27	25.54	10.04
,, July, 1822 ,, Dec. 1822 . .	8.34	19.14	25.6	10.8
,, Dec. 1822 ,, July, 1823 . .	7.8	19.23	25.6	11.43
,, July, 1823 ,, Dec. 1823 . .	8.24	19.63	25.34	11.39
,, Dec. 1823 ,, July. 1824 . .	8.81	19.41	25.9	10.6
,, July, 1824 ,, Dec. 1824 . .	8.78	19.09	26.1	10.31
,, Dec. 1824 ,, July, 1825 . .	14.	22.34	26.2	8.26
,, July, 1825 ,, Dec. 1825 . .	13.06	19.11	29.1	6.05
,, Dec. 1825 ,, July, 1826 . .	7.6	16.5	27.73	8.9
,, July, 1826 ,, Dec. 1826 . .	6.82	15.17	30.	8.35
,, Dec. 1826 ,, July, 1827 . .	6.95	14.97	30.95	8 02
,, July, 1827 ,, Dec. 1827 . .	7.34	14.77	30.	7.43
,, Dec. 1827 ,, July, 1828 . .	6.26	13.	27.41	6.74
,, July, 1828 ,, Dec. 1828 . .	6.64	13.3	28.33	6.66
,, Dec. 1828 ,, July, 1829 . .	6.23	12.96	28.23	6.73
,, July, 1829 ,, Dec. 1829 . .	6.34	13.43	29 69	7.09
,, Dec. 1829 ,, July, 1830 . .	7.01	13.28	27.85	6.27
,, July, 1830 ,, Dec. 1830 . .	6.82	12.72	26.77	5.90
,, Dec. 1830 ,, July, 1831 . .	6.65	12.82	28.58	6.17
,, July, 1831 ,, Dec. 1831 . .	6.82	12.37	27.40	5.55
,, Dec. 1831 ,, July, 1832 . .	6.97	12.76	29.43	5.79
,, July, 1832 ,, Dec. 1832 . .	7.24	12.61	29.52	5.37

Comparative Cost of Cotton Yarn in 1812 and 1830.

Hanks per day, per Spindle.			Price of Cotton and Waste, per lb.		Labour, per lb.		Cost, per lb.	
No.	1812.	1830.	1812.	1830.	1812.	1830.	1812.	1830.
			s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
40	2.	2.75	1 6	0 7	1 0	0 7¼	2 6	1 2¼
60	1.5	2.5	2 0	0 10	1 6	1 0½	3 6	1 10½
80	1.5	2.	2 2	0 11¼	2 2	1 7½	4 4	2 6¾
100	1.4	1.8	2 4	1 1	2 10	2 2¾	5 2	3 3¾
120	1.25	1.65	2 6	1 4	3 6	2 8	6 0	4 0
150	1.	1.33	2 10	1 8	6 6	4 11	9 4	6 7
200	.75	.90	3 4	3 0	16 8	11 6	20 0	14 6
250	.5	.5	4 0	3 8	31 0	24 6	35 0	28 2

The following statement of the advantages gained by the employment of the power-loom is given by Mr. Baines, on the authority of a manufacturer, and may be relied on as correct:—

"A very good *hand-weaver*, 25 or 30 years of age, will weave *two* pieces of 9-8ths shirting per week, each twenty-four yards long, containing 100 shoots of weft in an inch; the reed of the cloth being a forty-four Bolton count, and the warp and weft forty hanks to the pound.

"In 1823, a *steam-loom weaver*, about 15 years of age, attending two looms, could weave *seven* similar pieces in a week.

"In 1826, a steam-loom weaver, about 15 years of age, attending to two looms, could weave *twelve* similar pieces in a week; some could weave *fifteen* pieces.

"In 1833, a steam-loom weaver, from 15 to 20 years of age, assisted by a girl about 12 years of age, attending to four looms, can weave *eighteen* similar pieces in a week; some can weave *twenty* pieces."

The following table will show the effect which these successive improvements have had in diminishing the price of cotton cloths; the same article—a piece of calico known in the trade as 72⅞—is given throughout.

Years.	Prices paid for Weaving.		Prices paid for Cottons.		Selling Price of 72⅞ Calicoes.			Earnings of the Weavers per Week.	
	s.	d.	s.	d.	£.	s.	d.	s.	d.
1814	3	0	2	6	1	8	0		
1815	3	0	1	8	1	5	6		
1816	2	6	1	8	1	2	0	14	0
1817	2	6	1	10	1	0	7½		
1818	2	6	1	10	1	1	1½		
1819	2	0	1	2		17	8		
1820	2	0	1	1		15	9¾		
1821	1	8	0	11		15	8¾	14	0
1822	1	8	0	10		14	6½		
1823	1	8	0	10½		14	5		
1824	1	8	0	10¼		14	0		
1825	1	8	1	2	From To	14 18	0 6		
1826	1	6	0	8		10	6	13	0
1827	1	6	0	7½		10	3		
1828	1	4	0	7		10	2		
1829	1	4	0	6¾		8	9		
1830	1	4	0	6½		8	3		
1831	1	4	0	6½		8	9	12	0

The reductions made previously to the time embraced by the foregoing table are shown by the following list, which was given in to the House of Commons in 1812, on occasion of the inquiry then made into the effects of the Orders in Council issued in 1808, in retaliation of the Berlin and Milan decrees of Napoleon.

Prices paid for Weaving Twenty-four Yards of Cambric at Stockport, in Cheshire.

	s.
1802	25
1803	19
1804	15
1805	18
1806	15
1807	13
1808	12
1809	13
1810	12
1811	10
1812	10

The quantity of twenty-four yards above stated is as much as a good workman will produce of this description of cloth in a week. The low wages paid for making the same in the latter years, when every article of provisions was excessively high in price, and when, even at these insufficient rates, but little employment was to be had, caused great and wide-spread misery among the manufacturing population.

The following statement of the progress of the power-loom is taken from Mr. Baines's "History of the Cotton Manufacture:"—

"In 1813 there were not more than 2400 power-looms in use; yet this was enough to alarm the hand-loom weavers, who, attributing to machinery the distress caused by the Orders in Council and the American war, made riotous opposition to all new machines, and broke the power-looms set up at West Houghton, Middleton, and other places. Nevertheless, the great value of the power-loom having now been proved, it was adopted by many manufacturers, both in England and Scotland; and it will, no doubt, in time supersede the hand-loom. The rapidity with which the power-loom is coming into use is proved by the following table, the particulars of which were stated by R. A. Slaney, Esq., M.P., in the House of Commons, on the 13th of May, 1830, and which rest on the authority of Mr. Kennedy:—

"Number of Power-Looms in England and Scotland.

	In 1820.	In 1829.
In England	12,150	45,500
In Scotland	2,000	10,000
Total	14,150	55,500

"This number would appear to have been somewhat underrated. Dr. Cleland states that, in 1828, the Glasgow manufacturers had in operation, in that city and elsewhere, 10,783 steam-looms, and 2060 more in preparation: total, 12,843. He supposes there was an increase of 10 per cent. between 1828 and 1832, which would make the number 14,127 in the latter year. This is independent of other parts of Scotland, unconnected with Glasgow. In 1833, evidence was given before the Commons' Committee on Manufactures, Commerce, &c., that, in the whole of Scotland, there were 14,970 steam-looms. We may therefore safely take the number of power-looms in Scotland at the present time at 15,000.

"In England, the great increase took place during the years of speculation, 1824 and 1825; and comparatively few power-loom mills were built betwixt that time and 1832. But in 1832, 1833, and the former part of 1834, the trade has been rapidly extending; many mills have been built, and many spinners have added power-loom factories to their spinning-mills.

"Mr. W. R. Greg, an extensive spinner and manufacturer at Bury, gave evidence before the Select Committee of the House of Commons on Manufactures, &c., in August, 1833, that the number of power-looms had very materially increased of late years in and about Bury, and also at Stockport, Bolton, Ashton, and in Cheshire. He stated that he did not know any person who was then building a spinning-mill without the addition of a power-loom mill.

"Mr. Kennedy's estimate for 1829 was probably too low for England, as well as for Scotland: at all events, there are good reasons for believing that there must now be 85,000 power-looms in England. This conclusion is deduced from a computation of the number of workmen employed in power-loom weaving, founded on actual returns, obtained by the Factory Commissioners from the cotton-mills in Lancashire and Cheshire. It is also supported by the calculations of Mr. Bannatyne, and Messrs.

Samuel Greg and Co., the spinners and manufacturers of Bury. At the present time (1835), the machine-makers of Lancashire are making power-looms with the greatest rapidity, and they cannot be made sufficiently fast to meet the demands of the manufacturers. The result we have arrived at is as follows:—

Estimated Number of Power-Looms in Great Britain in 1833.

In England	85,000
In Scotland	15,000
Total . . .	100,000

"While the number of power-looms has been multiplying so fast, the hand-looms employed in the cotton manufacture are believed not to have diminished between 1820 and 1834, but rather to have increased. In the former year they were estimated by Mr. Kennedy at 240,000. In 1833, Mr. Grimshaw, a spinner and manufacturer of Colne, gave his opinion before the Committee of the Commons on Manufactures, &c., that the number of hand-loom cotton weavers in the Kingdom was about 250,000; whilst Mr. George Smith, manufacturer, of Manchester, estimated them at only 200,000. In the year 1834, several intelligent workmen and manufacturers from Glasgow gave evidence to the Commons' Committee 'On Hand-Loom Weavers,' that there were 45,000 or 50,000 hand-loom cotton-weavers in Scotland alone."

Since the publication of Mr. Baines's volume, returns have been made by the Inspectors of Factories of the number of power-looms actually in use in factories at the end of the year 1835, in each county of Great Britain and Ireland. From these returns, an abstract of which is given in this Chapter, it appears that the total number of self-acting looms in the United Kingdom employed for weaving cotton, was at that time 109,626; thus proving the accuracy of the foregoing calculations.

It does not appear likely that any considerable addition will in future be made to the number of handlooms employed for cotton-weaving; but at the present time (1836) the machine-makers of Lancashire are engaged to the full extent of their power in constructing power-looms; so that the number increases almost daily. We should be wrong, however, if we inferred that hand-looms are lying unemployed. Power-looms have not hitherto been found applicable to the production of fine cloths, or what are called fancy goods. The demand for these fluctuates considerably, and is at times greater than can be readily supplied. In the Report of the Select Committee of the House of Commons, appointed in the summer of 1834, to examine the numerous petitions presented by the handloom weavers, we find a statement given in evidence by Mr. Makin, a manufacturer of Bolton, to the following effect:—"I know that there is at present no surplus of weavers. I go nine miles from the seat of my manufacture on one side to get weavers, and I am putting out work nine miles across the country in another part to get weavers; and if I knew where I could get a certain description of weavers, by going nine miles another way, I should go. But it is a strange fact, that, whilst the demand for hand-loom cloth is greater than the production, yet the wages do not rise; and in about two months from this time (July, 1834) I know, from the experience of past years, that there will be demands for thousands of weavers more than can be obtained."

The fact stated by Mr. Makin, although seemingly at variance with the ordinary law of demand and supply, may admit of this solution;—that, when they can be furnished within a certain limited price, hand-loom cloths meet with an extensive sale; but that, when that limit is passed, other goods of home production, or similar goods of foreign make, come into successful competition with them; so that the manufacturers are not enabled, by the most extensive demand, to increase the rate of wages paid to the weavers.

A considerable amount of very valuable and authentic information respecting the amount of labour employed in the spinning and weaving factories of this kingdom, has been collected and embodied in their reports by the Commissioners appointed to collect information as to the employment of children in factories, and subsequently by the gentlemen appointed as inspectors, under the act of 1833, for regulating the labour of their children.

The following calculation, made by Mr. Stanway, under the direction of Mr. Cowell, one of the Commissioners, and inserted in the Supplementary Report of the Factory Commissioners (Part I., pp. 137, 138), is perhaps as near an approximation to the truth as, from the nature of the subject, (the numbers continually fluctuating,) it is reasonable to expect. Being founded upon actual and extensive returns, the statement may be received as substantially, although not perhaps minutely, correct.

Calculation of the total number of persons employed in cotton-mills in England.

"The subsequent calculation does not aim at fixing the whole number of operatives dependent upon the cotton trade for subsistence, but only of that part of the operative body which earns a livelihood in cotton factories *moved by power*, and is employed in carrying on the preparing, spinning, weaving, and accessary mechanical departments within the walls of them.

"It does not comprehend hand-loom weavers, printers, bleachers, dyers, cotton-thread lace-makers, (an enormous and growing branch of the cotton manufacture,) and many other branches of manufacture, either arising out of, or immediately dependent upon, the spinning of cotton by power. It comprehends those operatives alone who habitually work in cotton factories. It shows their body to consist of 212,800 persons, and to earn annually the enormous sum of 5,777,434*l.*

" *Calculation* :—

"The total quantity of cotton consumed in the spinning of yarn, in Great Britain, in 1832, as stated in 'Burn's Commercial Glance,' was 277,260,490 lbs.; and of this quantity, 27,327,120 lbs. was consumed in Scotland, leaving for the consumption of England 249,933,370 lbs.

"The net loss of cotton in spinning is estimated variously by different individuals. In the calculations of Mr. Kennedy, made use of by him in a paper published in the 'Transactions of the Manchester Literary and Philosophical Society,' it is taken at 1½ oz. per lb.; while Montgomery, in his 'Theory and Practice of Cotton-Spinning,' computes it at 1⅝ oz., and Burn at 1¾ oz.; but as the amount taken by Mr. Kennedy is that which appears to be generally considered correct, it is adopted in these calculations.

"If, then, from the quantity given above, we deduct 1½ oz. per lb., or 23,431,253 lbs., we shall have the total weight of yarn produced 226,502,117 lbs.

"The average number of hanks in each pound of yarn spun is considered, by apparently a majority of persons conversant with the subject, to be 40. Montgomery takes the average counts spun in Great Britain at 50, which, taking into account the finer average numbers spun in Scotland than in England, would fix the counts nearly as above stated.

"The returns made to the Lancashire forms of inquiry, as given in previous tables, show an average of finer counts than 40, but, as the returns were better made from the fine mills, than from the coarse, and from Manchester, where the finer yarn is spun, than from the country, it is evident that lower numbers ought to be taken than those shown in the returns; and, as the general opinion appears to be in favour of 40, this average is adopted.

"Three mills, in different situations, and of average capabilities, made a return of the quantity produced by them in the month ending the 4th May, 1833; and, as the average counts of the whole were 39.98 hanks to the lb., and as they also gave the number of hands employed in spinning during that month, and the duration of their labour, they furnished data from which may be easily calculated the total number employed in factories in England in preparing and spinning cotton.

"In the mill of the first, 344 persons in the spinning department, working 276 hours, produced—

18,000 lbs. of Nos. 30 to 32
18,000 lbs. of Nos. 38 to 42
2,400 lbs. of Nos. 150 to 170

In the second mill, 245 hands, working 270 hours, produced—

1,795 lbs. of No. 12
4,285 lbs. of No. 22
33,838 lbs. of No. 40

"And in the third, 110 hands, working 286 hours, produced—

16,700 lbs. of No. 40

"The average counts of the three being, as before stated, 39.98, and the produce 95,018 lbs.

"The total number of hours worked will therefore be $\overline{344 \times 376} + \overline{245 \times 270} + \overline{110 \times 286} = 192,554$; and the produce of each person per hour, $\frac{95,018}{192,554} = 0.49,346$ lbs.

"The usual estimate of 300 working days per annum of 11½ hours each, or 69 hours per week, would give $0.49,346 \times 11.5 \times 300 = 1,702.437$ lbs. the produce of each person per annum, and $\frac{226,508,117}{1,702.437} = 133,045$, the number of persons employed in the preparation and spinning of cotton in England.

"On an examination of supplement (Z*) it will be seen that, in the 67,819 persons of whom returns were made to the Commission, there were 42,401 engaged in preparing and spinning cotton, 23,920 in the weaving department, and 1,498 as engineers, mechanics, roller-coverers, &c.

"If, then, the same proportions are taken as existing in the total number of cotton-workers which are found in the returns made to the Lancashire forms of inquiry, the number of persons engaged in the manufacture of cotton-cloth in factories will be 75,055, and of those employed as engineers, &c., 4700; making, with the 133,045 in the spinning department, a general total of 212,800 persons engaged in cotton-factories.

"Which total number of 212,800 persons may be divided and distributed, by adopting the proportions given in the returns made to the Lancashire forms of inquiry, so as to show the probable number of persons employed in each of the eight branches or departments of cotton-working, and the aggregate amount of their net earnings per month."

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* Statement of the distribution of 67,819 hands into eight different branches or departments of cotton working, given in a previous page of the Supplement.

Employed in	Adults.		Children under 18 Years of Age.						Proportion whose Age & Sex are uncertain, from a deficiency in the Returns.	Total number employed.	Aggregate Amount of Monthly Net Earnings		
			Males.			Females.							
	Males.	Fe-males.	In the direct Employ of Masters.	In the direct Employ of Operatives.	Employer uncertain.	In the direct Employ of Masters.	In the direct Employ of Operatives.	Employers uncertain.			£.	s.	d.
Cleaning and spreading cotton . .	1,330	2,319	951	3	31	345	6	13	. .	4,998	8,631	19	6
Carding	10,361	15,062	4,983	461	78	8,099	458	163	819	40,484	75,276	10	0
Mule-spinning . .	22,727	5,196	3,038	23,634	257	1,255	8,663	82	364	65,216	139,660	17	9
Throstle-spinning .	793	3,000	1,409	25	100	2,203	19	160	. .	7,709	11,615	10	1
Reeling	722	11,208	182	25	..	2,306	76	119	. .	14,638	22,817	8	4
Weaving	20,440	28,566	4,581	2,582	204	12,109	4,261	119	2,193	75,055	168,663	16	3
Roller-covering . .	261	389	19	3	..	31	22	..	. .	725	1,764	18	5
Engineers, &c. . .	3,759	34	151	9	19	3	.. .	.	. .	3,975	15,987	0	9
	60,393	65,774	15,314	26,742	689	26,351	13,505	656	3,376	212,800	444,481	1	1

The foregoing table was, as already explained, constructed in order to show, from the result of partial returns, the probable number of persons employed in the various cotton-mills throughout the kingdom, divided according to their different employments. More extensive returns have since been obtained by the factory inspectors, and it is satisfactory to observe how nearly these later, and more detailed returns bear out the estimate formed by Mr. Stanway, and adopted by the Commissioners. It will be seen that the computation made by Mr. Stanway gives 212,800 as the number of persons of all ages employed in spinning and weaving factories in the United Kingdom; while the actual number given in to the inspectors amounts to 220,134 persons, being a difference of only 7334, or not quite 3½ per cent. Before giving the summary of the statements made by the inspectors, it may be satisfactory to insert the following particulars derived from returns made to the Commissioners, by the proprietors of 225 cotton-mills in Lancashire.

Place where employed.	Adults.		Children under Eighteen Years.						Total Number em-ployed.	Aggregate Amount of their Net Earnings for the Month ending 4th May, 1833.			Number paid by fixed Daily Wages.	Number paid in propor-tion to the Quantity produced.	Number whose Mode of Payment is not given in Returns.
			Males.			Females.									
	Males.	Fe-males.	In the direct Employ of Masters.	In the direct Employ of Operatives.	Employers uncertain.	In the direct Employ of Masters.	In the direct Employ of Operatives.	Employers uncertain.		£.	s.	d.			
Manchester & immediate neighbourhd.	5,847	7,624	1,734	2,803	63	2,592	1,640	59	22,442	45,164	9	5	11,690	9,178	1,574
Stockport and Heaton Norris	2,601	2,525	660	1,027	28	976	541	38	8,396	18,405	5	9¼	3,470	4,764	162
Duckenfield and Stayley Bridge . .	2,551	2,421	347	976	9	859	358	25	8,542	19,409	7	5½	2,693	3,827	2,022
Hyde, Brinnington, &c.	2,802	3,507	1,076	832	51	1,921	180	13	10,382	23,397	16	10	2,409	6,637	1,336
Tintwistle, Glossop, &c.	1,321	1,413	233	591	26	423	333	30	4,370	8,884	10	4½	1,796	1,917	657
Oldham . .	1,954	1,388	310	882	40	694	389	38	5,695	11,467	9	9¾	2,672	2,806	217
Bolton . .	1,650	1,482	383	1,204	3	696	750	6	6,174	11,548	15	7	4,285	1,833	56
Warrington .	334	355	65	150	..	110	88	..	1,102	2,019	4	6¼	348	539	215
Greg&Co.,and R.&T.Taylor	187	247	72	58	..	127	25	..	716	1,338	5	10½	250	449	17
	19,247	20,962	4,880	8,523	220	8,398	4,304	209	67,819	141,635	5	7¾	29,613	31,950	6,256

Employed in	Adults.		Children under Eighteen Years.						Number of Persons whose Age and Sex are not given in Returns.	Total Number of Persons employed.	Aggregate Amount of their Net Earnings for the Month ending 4th May, 1833.		
			Males.			Females.							
	Males.	Fe-males.	In the direct Employ of Masters.	In the direct Employ of Operatives.	Employers uncertain.	In the direct Employ of Masters.	In the direct Employ of Operatives.	Employers uncertain.			£.	s.	d.
Cleaning and spreading cotton . .	424	739	303	1	10	110	2	4	. .	1,593	2,750	19	11
Carding	3,302	4,800	1,588	147	25	2,581	146	52	261	12,902	23,990	9	10½
Mule-spinning . .	7,243	1,656	968	7,532	82	400	2,761	26	116	20,784	44,509	13	9¼
Throstle-spinning .	253	956	449	8	32	702	6	51	. .	2,457	3,701	16	10
Reeling	230	3,572	58	8	..	735	24	38	. .	4,665	7,271	17	5½
Weaving	6,514	9,104	1,460	823	65	3,859	1,358	38	699	23,920	53,752	17	5¼
Roller-covering . .	83	124	6	1	..	10	7	..	. .	231	562	9	6½
As engineers, mechanics, firemen, watchmen, &c.	1,198	11	48	3	6	1	. .	..	. .	1,267	5,095	0	9¾
	19,247	20,962	4,880	8,523	220	8,398	4,304	209	1,076	67,819	141,635	5	7¾

Statement of the Number of Cotton Factories in operation in the different Parts of the United Kingdom, with the Number and Ages of the Persons employed therein, abstracted from returns made by the Inspectors of Factories in 1835.

Counties, &c.	Number of Factories.		Between 8 & 12 Years.		Between 12 & 13 Years.		Between 13 & 18 Years.		Above 18 Years.		Total Number of Persons employed.		
	At Work	Empty	Males.	Fem.	Males.	Fem.	Males.	Fem.	Males.	Fem.	Males.	Females.	Total.
ENGLAND.													
Chester . .	109	7	425	406	1,448	1,206	3,672	4.315	9,971	10,069	15,516	15,996	31,512
Cumberland .	13	..	8	4	57	38	169	332	392	658	626	1,032	1,658
Derby. . .	92	3	182	192	504	564	1,073	1,924	2,855	3,556	4,614	6,236	10,850
Durham . .	1	..	. .	. .	. .	2	1	11	8	11	9	24	33
Lancaster .	683	32	2,806	1,983	6,419	5,261	16,855	20,365	34,071	34,655	60,151	62,264	122,415
Leicester . .	6	..	9	. .	66	17	130	92	120	158	325	267	592
Middlesex .	7	..	22	. .	24	. .	109	14	62	119	217	133	350
Nottingham .	20	..	17	23	82	131	132	382	250	706	481	1,242	1,723
Stafford . .	13	..	72	78	67	113	201	403	409	705	749	1,299	2,048
York, W. Riding	126	..	489	387	529	533	1,632	2,031	2,537	2,773	5,187	5,724	10,911
Total, England	1,070	42	4,030	3,073	9,196	7,865	23,974	29,869	50,675	53,410	87,875	94,217	182,092
Wales, Flint .	5	..	. .	. .	56	33	146	208	250	458	452	699	1,151
Scotland . .	159	..	454	538	1,258	1,832	2,845	7,597	6,168	12,403	10,529	22,051	32,580
Ireland . .	28	..	44	58	153	181	286	561	960	1,553	1,639	2,672	4,311
Total, United Kingdom .	1,262	42	4,528	3,669	10,663	9,911	27,251	38,235	58,053	67,824	100,495	119,639	220,134

The numbers given in the foregoing summary have reference only to those branches of the cotton manufacture which are carried on in spinning and weaving factories, and do not include the persons employed in printing and dyeing, nor the numerous hand-loom weavers, with many other branches of the manufacture, and the great numbers who are otherwise directly or indirectly dependent upon it for support. Mr. M'Culloch has estimated that, "allowance being made for old and infirm persons, children, &c., dependent upon those actually employed in the various departments of the cotton manufacture; and in the construction, repairs, &c., of the machinery and buildings required to carry it on," the entire cotton manufacture "must furnish, on the most moderate computation, subsistence for from 1,200,000 to 1,400,000 persons."

If we were to apply Mr. Stanway's method of computation in order to discover the number of persons employed in factories at various periods, we should find that, for spinning the quantities of cotton used in 1801 and subsequent periods, the following numbers of persons would be required:—

1801	26,929	1821	68,257
1806	28,626	1826	80,918
1811	44,863	1831	135,742
1816	48,094*	1834	153,304

These numbers are exclusive of the persons who were employed in weaving in factories, and who, according to Mr. Stanway's estimate, amounted, in 1832, to 75,055.

It would by no means furnish a correct view, however, if the amount of labour required for the conversion of the given quantities of cotton into yarn at the above-mentioned periods were taken at an uniform rate. The vast improvements made during the last few years in the machinery applied to spinning has caused such an economy in the application of labour, that not one-half of the number of persons is now required for carrying forward the various manufacturing processes with a given weight of cotton, that were employed for producing an equal result thirty years ago. This fact will be sufficiently illustrated by the following statement, taken from the books of Mr. Thomas Houldsworth, an eminent cotton-spinner of Manchester, and laid before the Committee on Manufactures, Commerce, &c., which sat in 1833. This statement will further show that, notwithstanding the great reduction in the rate of wages which has necessarily accompanied the introduction of improved machinery, the actual money-earnings of the operative spinner are greater now than they were at the beginning of the century, and that his command of the necessaries of life places him in a far more advantageous position than he then occupied.

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* Beginning of peace. In 1814, the last year of war, the number would be 26,715.

Years.	Work turned off by one Spinner per Week.		Wages per Week.			Hours of Work per Week.	Prices from Greenwich Hospital Records.		Quantities which a Week's Net Earnings would purchase.	
	lbs.	Nos.	Gross.	Piecers.	Net.		Flour per Sack.	Flesh per lb.	lbs. of Flour.	lbs. of Flesh.
			s. d.	s. d.	s. d.			d. d.		
1804	12	180	60	27 6	32 6	74	83	6 to 7	117	62½
"	9	200	676	31	36 6	74	83	6 to 7	124	73
1814	18	180	72	27 6	44 6	74	70 6	8	175	67
"	13½	200	90	30	60	74	70 6	8	239	90
1833	22½	180	54 8	21	33 8	69	45	6	210	67
"	19	200	65 3	22 6	42 9	69	45	6	267	85

" The sack of flour is taken at 280 lbs.

"The above is the result of an average of several men's work at the different periods."

It will be seen that, in 1833, the number of hours employed during the week was 69, instead of 74, which it had been in the former years. But for this reduction in the time of working, the net earnings would have been for No. 180, 36*s.* 1*d.*, and for No. 200, 45*s.* 10*d.*; and the quantities of flour and meat would have been for No. 180, 224lbs. and 72lbs., and for No. 200, 285lbs. and 91 lbs. respectively.

The result of the foregoing table is corroborated by Mr. Babbage, who, in his "Economy of Manufactures," page 337-9, fourth edition, gives the following statement:—

"A machine called in the cotton manufacture a 'stretcher,' worked by one man, produced as follows:—

Years.	Pounds of Cotton Spun.	Roving Wages per Score.		Rate of Earning per Week.	
		s.	*d.*	*s.*	*d.*
1810	400	1	3½	25	10
1811	600	0	10	25	0
1813	850	0	9	31	10½
1823	1000	0	7½	31	3

"The same man working at another stretcher, the roving a little finer, produced:—

1823	900	0	7½	28	1½
1825	1000	0	7	27	6
1827	1200	0	6	30	0
1832	1200	0	6	30	0

"In this instance, production has gradually increased, until, at the end of 22 years, three times as much work is done as at the commencement, although the manual labour employed remains the same. The weekly earnings of the workmen have not fluctuated very much, and appear on the whole to have advanced: but it would be imprudent to push too far reasonings founded upon a single instance.

"The produce of 480 spindles of 'mule-yarn spinning' at different periods was as follows:—

Years.	Hanks, about 40 to the pound.	Wages per Thousand. s.	d.
1806	6,668	9	2
1823	8,000	6	3
1832	10,000	3	8

"The subjoined view of the state of weaving by hand and by power-looms at Stockport, in the years 1822 and 1832, is taken from an enumeration of the machines contained in sixty-five factories, and was collected for the purpose of being given in evidence before a Committee of the House of Commons.

	In 1822.	In 1832.	
Hand-loom weavers	2800	800	2000 decrease.
Persons using power-looms	657	3059	2402 increase.
Persons to dress the warp	98	388	290 increase.
Total persons employed	3555	4247	692 increase.
Power-looms	1970	9177	8207 increase.

During this period the number of hand-looms in employment has diminished five-sevenths, whilst that of power-looms has increased to more than five times its former amount. The total number of workmen has increased about one-third; but the amount of manufactured goods (supposing each power-loom to do only the work of three hand-looms) is three and a half times as large as it was before.

"In considering this increase of employment, it must be admitted that the two thousand persons thrown out of work are not exactly of the same class as those called into employment by the power-looms. A hand-weaver must possess bodily strength, which is not essential for a person attending a power-loom: consequently women and young persons of both sexes, from fifteen to seventeen years of age, find employment in power-loom factories. This, however, would be a very limited view of the employment arising from the introduction of power-looms: the skill called into action in building the new factories, in constructing the new machinery, in making the steam-engines to drive it, and in devising improvements in the structure of the looms, as well as in regulating the economy of the establishment, is of a much higher order than that which it had assisted in superseding; and if we possessed any means of measuring this, it would probably be found larger in amount. Nor in this view of the subject must we omit the fact that, although hand-looms would have increased in number if those moved by steam had not been invented, yet it is the cheapness of the article manufactured by power-looms which has caused this great extension of their employment; and that, by diminishing the price of one article of commerce, we always call into additional activity the energy of those who produce others. It appears that the number of hand-looms in use in England and Scotland, in 1830, was about 240,000; nearly the same number existed in the year 1820; whereas the number of power-looms which, in 1830, was 55,000*, had, in 1820, been 14,000. When it is considered that each of those power-looms did as much work as three worked by hand, the increased producing power was equal to that of 123,000 hand-looms. During the whole of this period the wages and employment of hand-loom weavers have been very precarious."

In the cotton-mill of Messrs. Houldsworths, in Glasgow, a spinner employed on a mule of 336 spindles and spinning cotton 120 hanks to the pound, produced, in 1823, working 74½ hours in the week, 46 pounds of yarn, his net weekly earnings for which amounted to 26*s.* 7*d.* In 1833, the rate of wages having in the meanwhile been reduced 13¼ per cent., and the time of working having been lessened to sixty-nine hours, the spinner was enabled, by the greater perfection of the machinery, to produce, on a mule of the same number of spindles, 52½ pounds of yarn of the same fineness, and his net weekly earnings were advanced to 29*s.* 10*d.*

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* The number estimated by Mr. Kennedy in 1829.

But a much more considerable economy than this has been very lately produced in cotton-mills by increasing the size of the mules. Mr. Cowell, in his "Explanatory Preface to the Tables relative to Cotton and Silk Mills in the Lancashire District," inserted in the Supplementary Report of the Factory Commissioners, gives the following example of the effect of this improvement, as regards the cost of the yarn and the earnings of the spinner.

"In the year 1833, in two fine spinning-mills at Manchester, while I was in the town, a spinner could produce sixteen pounds of yarn of the fineness of 200 hanks to the pound, from mules of the productive fertility of 300 to 324, working them sixty-nine hours; and the quantity that he turned off in sixty-nine hours more frequently exceeded sixteen pounds than fell short of it.

"These very mules were being replaced by others of double power while I was at Manchester. Let us examine the effect on the spinner's earnings:—In the early part of last year he produced sixteen pounds of yarn of No. 200 from mules of the power of 300 to 324 spindles. Consulting the list of prices, I perceive that in May he was paid 3*s.* 6*d.* a pound: this gives 54*s.* for his gross receipts, out of which he had to pay (I will put the amount high) 13*s*. for assistants. This leaves him with 41*s*. earnings. His mules have their productive fertility doubled. They are converted into mules of the power of 648. He is now paid 2*s*. 5*d*. a pound instead of 3*s*. 6*d*. But he produces thirty-two pounds of yarn of the fineness of 200 hanks to the pound in sixty-nine hours. His gross receipts are immediately raised to 77*s*. 4*d*. I will now admit that he requires *five* assistants to help him, and averaging their cost at 5*s*. a piece, their labour will cost him 25*s*., and to avoid all cavil, I will add 2*s*. extra. Then deducting 27*s*. from his gross receipts, there remains a sum of 50*s*. 4*d*. for his net earnings for sixty-nine hours' work instead of 41*s*., an increase of more than 20 per cent., while the cost of the yarn is reduced 13*d*. per pound."

An effect such as has just been described can only be produced while the trade is in a course of rapid extension. If the productive power of the machines were doubled without a corresponding increase in the demand, it is clear that the operative spinners could not receive a greater amount of weekly earnings, but that, on the contrary, many of them would be thrown out of work, and a competition for employment would thence arise which must occasion a reduction in their actual receipts. Considered in this point of view, the prosperity of this branch of national industry becomes a subject of the greatest importance — an importance far beyond all calculation of mere shillings and pence. The tendency of all improvements in the various processes of the cotton manufacture is the abridgment of human labour, but hitherto, such has been the gigantic progress of the trade, as to give full employment to the hands who, in a less prosperous state of things, would have been thrown out of work. Nor is this all. The assistants of the spinners, who, from their occupation in joining the threads broken in the spinning, are called *piecers*, and who are much more numerous than the spinners themselves, are, while thus employed, qualifying themselves to become spinners when they grow up. Hitherto the demand for workmen of that kind has been sufficiently great to absorb all who have thus been qualified, and to cause them to receive, as spinners, adequate and even liberal wages. Piecers are generally employed in the proportion of four to one spinner, but one of these four is generally a girl, who does not in after-life become a spinner, but is transferred to some other department of the mill. It is further probable that, of the three boys, one may cease to work in a factory, but even then the number of candidates for employment as spinners will be continually doubled in the course of a few years, and if we had no other means for ascertaining the progressive extension of the manufacture, the fact of the continual absorption of these fresh hands would prove how great that extension must be—that it must have continued with a constantly accelerated speed in order not to lower the earnings of the operative spinners, whose ranks are thus increased in a geometrical ratio.

Provided nothing shall occur to prevent the cotton manufacture of this country from developing itself in the same extraordinary manner as it has done during the last twenty years, the new candidates for employment will of course receive the same encouragement as those have experienced who have preceded them. But this is a state of things very liable to be deranged. There are many causes which might contribute to this derangement. A war, however much on other grounds to be deplored, might in this respect be among the least fatal of the checks to our manufacturing industry, since it would offer another employment in the place of those which would be abridged. The closing of foreign markets, through the increasing skill or the jealousy of manufacturers in other countries, and a falling off in the hitherto continually augmented supply of the raw material, are among the more obvious of those adverse circumstances. The closing against us of some accustomed channels of trade has, at various times, been experienced; and the degree of distress which it would otherwise have occasioned has, in a short time, been removed by the demands of new customers, who have, in a measure, been compelled to become such by the continually diminishing prices of our goods. It will be seen, in a future section of this work, in how great a degree these counteracting causes have operated during the last thirty-five years: but although hitherto the favourable have always more than counterbalanced the unfavourable circumstances that have affected the demand for our products, it can hardly be hoped that the same good fortune will always attend us; that "new worlds" are to be continually "called into existence" as fast as the improvements of our spinning and weaving machinery may require new customers; or that another India will offer a market in which we can undersell the native manufacturers of fabrics, the raw material for which is grown upon their own soil, and which from time immemorial have been among the chief staples of their country.

These forebodings might, it is true, have been advanced with apparently equal reason at any time during the period in which the cotton manufacture of England has been attaining to the magnitude which it has now reached, and which it has been endeavoured faintly to sketch. According to present appearances there has, indeed, hardly ever been a time in which those forebodings might not have been urged with greater reason than now, when the raw material is reaching our shores in unwonted abundance, and the real demands of consumers in almost every part of the world are giving unremitted employment to every spindle and loom throughout the kingdom. He must, however, have read the page of history, and especially of commercial history, to very little purpose who has not perceived that, when least dreaded and expected, changes will sometimes arise which no foresight could predict, no prudence or exertion avert. The better understanding of the principles of trade on the part of those to whom the business of legislation is confided may do much to prevent the dreaded reverses; an increasing degree of enlightenment among the rulers of other countries, leading them to a greater encouragement of commercial intercourse, may do more; and it is to be hoped and expected that the example in this respect set within the last few years by England, in abandoning restrictions which were so long and pertinaciously held by her, may overcome those prejudices in the minds of foreigners, which our commercial success in spite of those restrictions has fostered, and that a spirit of liberality between nations will be acknowledged as the truest means for promoting the prosperity of each. When all this shall be accomplished, however, constant vigilance will be required, not indeed for what is called the *protection* of our great manufacture, but to avert or to remove obstacles as they may present themselves, and especially to relieve the springs of industry from those which remain of the shackles by which its energy has in former times been cramped. Much has been done to this end already during the last four years, by reforming our tariff, and we may confidently hope that whatever remains to be effected in this respect will be completed under the auspices of the same enlightened policy by which so many reforms have already been brought about in our commercial system. Any further observations on this branch of the subject may, with more propriety, be deferred to that part of this work which will be devoted to the consideration of our external commerce.

At the present time (November, 1835) the extension of cotton factories is going forward at a rate at least equal to that experienced at any former period. Dr. Kay, one of the Assistant Poor Law Commissioners, in a report dated 22nd July, 1835, made by him to the Central Board, gives a statement of the "quantity of steam-power either recently erected but not supplied with hands, or which is ordered and will be in operation in a year and a half, or two years, in the cotton districts of Lancashire and its immediate vicinity." This statement comprises thirty different places in which the new machinery is to be applied; the number of factories in which it is to be set to work is 169, and the amount of the power is stated to be equal to 7507 horses. Whenever this power shall be brought into complete activity, it will require the employment of more than 43,000 additional persons of all ages, calculating according to the relation which is known to exist at this time between the amount of mechanical power and of the number of persons employed in the cotton-mills of Lancashire. This number will, however, admit of some abatement, through the use of the self-acting mule, which will be chiefly, if not altogether, adopted in cases where new machinery must be provided.

The following table of the number of power-looms used in the various manufactures of this country has been compiled from returns obtained by the Inspectors of Factories, and laid before Parliament.

Statement of the Number of Power-Looms used in Factories in the United Kingdom, at the end of the year 1835, distinguishing Counties, and the branch of Manufacture in which the same are used.

	Cotton.	Woollen.	Silk.	Flax.	Mixed Goods.	Total.
Lancashire	61,176	1,142	366	. .	. .	62,684
Westmoreland	. . .	8	. .	. .	. .	8
Cheshire	22,491	8	414	. .	. .	22,913
Derbyshire	2,403	. . .	166	. .	. .	2,569
Yorkshire	4,039	3,770	. .	. .	. .	7,809
Staffordshire	336	. . .	119	. .	. .	455
Devonshire	. . .	. . .	80	. .	. .	80
Essex	. . .	. . .	106	. .	. .	106
Kent	. . .	. . .	. .	12	. .	12
Leicestershire	40	89	. .	. .	. .	129
Middlesex	8	. . .	. .	. .	. .	8
Norfolk	. . .	. . .	300	. .	. .	300
Somersetshire	. . .	74	156	. .	. .	230
Warwickshire	. . .	. . .	. .	. .	25	25
Worcestershire	. . .	. . .	7	. .	. .	7
Gloucestershire	. . .	4	. .	. .	. .	4
Montgomeryshire	. . .	4	. .	. .	. .	4
Cumberland	186	. . .	. .	. .	. .	186
Durham	. . .	. . .	. .	29	. .	29
Northumberland	. . .	6	. .	. .	. .	6
Total in England	90,679	5,105	1,714	41	25	97,564
Lanarkshire	14,069	. . .	. .	. .	. .	14,069
Renfrewshire	1,339	. . .	. .	26	. .	1,365
Dumbartonshire	534	. . .	. .	. .	. .	534
Buteshire	94	. . .	. .	. .	. .	94
Ayrshire	736	. . .	. .	. .	. .	736
Kirkcudbright	90	. . .	. .	. .	. .	90
Perthshire	421	. . .	. .	. .	. .	421
Aberdeenshire	248	. . .	. .	142	. .	390
Roxburghshire	. . .	22	. .	. .	. .	22
Total in Scotland	17,531	22	. .	168	. .	17,721
Waterford	339	. . .	. .	. .	. .	339
Wexford	67	. . .	. .	. .	. .	67
Kildare	52	. . .	. .	. .	. .	52
Dublin	23	. . .	. .	. .	. .	23
Antrim	340	. . .	. .	. .	. .	340
Down	425	. . .	. .	. .	. .	425
Armagh	170	. . .	. .	100	. .	270
Total in Ireland	1,416	. . .	. .	100	. .	1,516
SUMMARY.						
England	90,679	5,105	1,714	41	25	97,564
Scotland	17,531	22	. .	168	. .	17,721
Ireland	1,416	. . .	. .	100	. .	1,516
United Kingdom	109,626	5,127	1,714	309	*25	116,801

* The materials used are worsted, cotton, silk, and India-rubber thread; the articles manufactured are girths, belts, braces, garters, and the like.

The art of printing on woven fabrics is of very ancient origin. Anderson, in his "History of Commerce," states that it was first practised in London in 1676. The first cotton printer in England is said to have been a Frenchman, whose print-ground was at Richmond, on the banks of the Thames. Owing to the interference of parliament, first by the imposition of heavy duties, and afterwards by more direct restrictions, the trade was destroyed in 1720. The object of the legislature in this proceeding appears to have been the encouragement of the silk and woollen manufactures. The restriction against wearing printed fabrics, of which cotton formed a part, was repealed in 1736, and it was computed that, in 1750, as many as 50,000 pieces of goods made of linen-warp and cotton-weft were printed in England. At that lime no means had been devised for spinning cotton-yarn of a strength which fitted it for forming the warp. In about fifteen years thereafter, the printing business was introduced into Lancashire, and from that time appears to have grown in proportion to the increase of the cotton manufacture. But it is only during the present century that this branch of industry has attained to any considerable importance. In consequence of the duty imposed upon printed cottons, we are acquainted with the quantity which has undergone the process at different periods up to the year 1831, when the duty was wholly repealed.

	Yards.
The quantity printed in 1796 was .	20,621,797
In 1800, it had increased to . .	32,869,729
In 1814, it had further increased to .	124,613,472
And in 1830, had reached to . .	347,450,299

being more than ten times the quantity printed at the beginning of the century.

This great increase must be ascribed to the improved contrivances and processes which, in the interval, have been introduced. By some of these, processes which formerly occupied many weeks are now performed in a few hours, effecting a great saving in labour and in the amount of capital required. The substitution of metallic cylinders on which the patterns are engraved, in the place of wooden blocks, was first practised about 1785, and at once effected a great saving. The process of engraving the entire surface of these large cylinders was, however, a very expensive operation; and it was consequently a more important improvement when the system was introduced of engraving the pattern upon a small steel cylinder, and thence transferring it by pressure, first to softened steel, and then, this being hardened, to the copper cylinders, in the manner which has since been used for multiplying plates used for printing bank-notes. By this means the engraved patterns can be transferred to almost an indefinite number of cylinders at a trifling expense. The small cylinder upon which the engraving is first sunk is called the *die*, the second cylinder to which the pattern is transferred in relief is called the *mill*. This, when hardened, will give the required impression to a great number of cylinders made of the softer metal, and as the die can likewise be made to give up its pattern to several mills, a sufficient number of cylinders can always be produced from one engraving.

The introduction of this great improvement took place about 1808, and has had a powerful effect in extending the trade of the country. At this time, cylinders thus made and engraved, after the novelty of the patterns is gone by in England, are exported to various parts of Europe and America.

The policy of subjecting such an article as printed cottons to the burthen and restrictions of the excise laws was always much questioned. To preserve our export trade, it was, of course, necessary, during the continuance of the duty, to grant a drawback upon shipment equal to the amount of the duty. The net revenue derived from the tax, on an average of the ten years preceding its repeal, was a little more than 600,000*l*. per annum; but in order to realize this sum to the Exchequer, the gross amount of duty levied during the same time averaged 1,850,000*l*. per annum, more than two-thirds of the same being repaid as drawback upon quantities exported. This, in itself, was a great and acknowledged evil: it held out temptation, and opened the door to frauds, which, it is well known, were committed to a considerable extent; and besides this crying evil, the interference of revenue regulations placed many obstacles in the way of experiments and improvements, as we have since happily been able to ascertain. Without entering into any minute explanations upon this subject, it may be stated, in proof of this assertion, and upon the authority of a gentleman thoroughly and intimately conversant with all the details of calico printing, that, upon the same premises, with the same capital, and employing the same amount of labour, double the quantity of cloths are now printed which were printed previous to the repeal of the duty, and to the consequent removal of the revenue-officers from the printworks.

Another very great improvement has been effected within the last five years. At first, only one colour could be imparted to the pattern on the cylinder; and if more than one colour were required, it was necessary to resort to a different process, and to print the several colours by different operations. This disadvantage was at length partially got over; so that, five years ago, printers were enabled to impart two, and even three, colours by means of cylinders; but it is now common to print five colours at one operation. The vast improvement which has latterly been produced in the style and execution of printed cotton goods is matter of such common observation, that it cannot be necessary to enlarge upon it here: but for it, the cotton manufacture could not, in this branch, have stood against the powerful rivalry to which it has of late been subjected by our silk manufacture. This improvement has been assisted by the discovery of a method for imparting to cotton fabrics the brilliant red colour of cochineal, which was previously applied to woollens only. This is effected by simply passing a current of steam on to cloth to which the cochineal-dye has previously been applied, that process having the effect of fixing the colour.

It is not possible to make any comparative estimate of the growth of the hosiery branch of the cotton manufacture. The chief seats of this manufacture are Nottinghamshire and Derbyshire; but other branches of the hosiery trade are carried on in those counties, and cotton is partially employed in the stocking-frames of Leicestershire. The estimates formed have generally had reference to all the branches of the hosiery manufacture collectively. Blackner estimated the number of stocking-frames at work in 1812 as 29,590. Thirty years before that time, their number had been estimated at 20,000. Judging from the situations assigned for the working of the frames in 1812, it would appear that rather more than one-third of those machines were employed in producing cotton hose; but, for the reason already stated, no very accurate estimate of the proportions can be formed from their locality. In 1833, a meeting was held of delegates from the frame-work knitters, when a resolution was formed for dividing the seat of the hosiery manufacture into districts, with the view of obtaining, among other things, exact details of the number and description of frames, the amount of labour employed in them, and such further particulars as might enable the workmen to co-operate for the more effectual protection and advancement of their interests. The resolution thus formed was not, indeed, carried into effect in the manner nor with the objects proposed; but was of advantage, by its having been the means of drawing to the subject the attention of Mr. Felkin, a merchant of Nottingham, intimately connected with the trade of the hosiery districts; and this gentleman has drawn up an estimate of the extent of the manufacture in its various branches, which is believed to present a sufficiently accurate approximation to the condition of the trade at that time to answer all practical purposes. The following is Mr. Felkin's estimate:—

Each narrow cotton-frame produces about 40 dozen of hose a-year, if of women's size; wide cotton-frames, 300; narrow worsted, 75; wide worsted, 150; and silk, 30. There are—

Frames.		Dozen.		lbs.		Valued at £.	Wages for Making. £.	And Finishing. £.	Total. £.
10,300	making fashioned cotton hose, produce	420,000	and consume	880,000	of cotton yarn,	73,000	220,000	32,000	325,000
6,000	— cut-up, &c. —	1,960,000	——	2,940,000	——	172,000	285,000	98,000	555,000
9,500	— fashioned worsted —	710,000	——	2,840,000	of worsted	284,000	215,000	41,000	540,000
1,000	— cut-up, &c. —	100,000	——	400,000	——	40,000	30,000	10,000	80,000
1,800	— angola —	95,000	——	332,500	——	45,000	40,000	19,000	104,000
1,900	— lamb's-wool —	135,000	——	639,500	——	80,000	50,000	16,000	146,000
3,000	— silk —	90,000	——	105,000	of silk	120,000	108,000	13,000	241,000
33,000		3,510,000		8,137,000		814,000	948,000	229,000	1,991,000

According to this calculation, the value of the cotton hosiery annually made is 880,000*l.*; that of worsted, &c.. is 870,000*l.*; and that of silk is 241,000*l.*—To produce these goods, it is probable that 4,584,000 lbs. of raw cotton wool, value 153,000*l.*, are used; and 140,000lbs. of raw silk, (two-fifths China, and three-fifths Novi,) value 91,000*l.*; also, 6,318,000 lbs. of English wool, value 316.000*l.* The total original value of the materials used is therefore 560,000*l.*, which, it appears, becomes of the ultimate cost value of 1,991,000*l.* in this manufacture.

There are employed in the various processes as follows, viz.:—

In cotton-spinning, doubling, &c., 3,000; worsted-carding, spinning, &c., 2,500; silk-winding, throwing, &c., 1,000 . .	6,500
In making stockings, 13,000 men, 10,000 women, 10,000 youths; and women and children in seaming, winding, &c., 27,000	60,000
In embroidering, mending, bleaching, dyeing, dressing, putting-up, &c., probably about	6,500
Total persons employed	73,000

The capital employed in the various branches of the trade may be thus estimated, taking the machinery and frames at neither their original cost nor actual selling price, but at their working value, and the stocks of hosiery on an average of years:—

	£.		In process & stock. £.		£.		In process & stock. £.
In mills and machinery for preparing cotton,	70,000	In wool and yarn,	85,000	In narrow cotton frames,	62,000	In goods,	350,000
— — worsted, &c.,	52,000	—	150,000	In wide —	60,000	—	345,000
— — silk,	18,000	—	35,000	In narrow worsted frames,	76,000	—	85,000
				In wide —	11,000		
				In silk frames	36,000		
Fixed capital in mills, &c. . .	140,000	Floating capital in spinning, &c.	270,000	Fixed capital in frames,	245,000	Floating capital, making hose	780,000
—— in frames . .	245,000					Spinning, &c.	270,000
Total of fixed capital .	385,000						

Since 1812, when Mr. Blackner made the estimate of 29,590 frames as the total of what were used in the United Kingdom, many frames have been widened so as to make two stockings at once, which was not the case before. The quantity of cotton hosiery goods made in 1833 was estimated by Mr. Felkin to have increased more than fifty per cent. in the preceding twenty years—an opinion which agrees with the fact which everybody must have observed, that the use of cotton stockings has, during that time, been superseding those of woollen to a great extent among the female part of the population. It will also be seen from the statement of Mr. Felkin, that the number of frames employed for making cotton goods, which in 1812 was about one-third the whole number employed, formed about one-half in 1833, or 16,300 out of 33,000 frames.

The making of stockings is altogether a domestic manufacture, being carried on in the dwellings of the workmen. Some of these persons possess frames, which are their own property, but the greater part use frames which belong to the master-manufacturers, by whom the workmen are employed, and who are paid by those workmen an annual rent, varying from forty shillings to five pounds, according to the size and capability of the frame.

The bobbin-net manufacture has altogether risen up during the present century, and in a comparatively small number of years has become an object of national importance, finding employment for between 150,000 and 200,000 persons, whose wages amount to 2,500,000*l*. per annum, as stated in a memorial addressed in June, 1834, to the Lords of the Treasury by the principal merchants and manufacturers engaged in the bobbin-net trade.

The first successful attempt at producing, by means of machinery, net-work bearing the characteristics of lace, was made in 1809; and this machine, rude in its construction, and slow and inefficient in its operation, in comparison with the improved machinery now employed for the same purpose, was the subject of a patent, the possessors of which realized, during the continuance of their exclusive right, very large fortunes. Since the expiration of this patent, the machinery of the frame has been most importantly simplified, and its efficiency increased; so that, by the application of an equal amount of labour, twelve times the quantity of net is now produced which could have been previously made, and a quantity of the finished manufacture is now sold for 2*s.* 6*d.*, which, during the continuance of the patent, was sold for 5*l.* The extent to which the bobbin-net manufacture had since reached may be seen from the following statements recently drawn up by Mr. Felkin, who has been personally interested in the trade from its commencement, and possesses all the requisite facilities for preparing an accurate estimate concerning it:—

Statistics of the Bobbin-Net Trade.

Capital employed in Spinning and Doubling the Yarn:—		
Fixed capital in 35 spinning and 24 doubling factories—724,000 spinning, 296,700 doubling spindles	£715,000	
Floating capital in spinners' and doublers' stock, and necessary sundries	200,000	
	915,000	
Deduct 1-6th, employed for foreign bobbin-net trade	155,000	
Total capital employed in spinning and doubling for English bobbin-net trade		£760,000
Capital employed in Bobbin-Net making:—		
Fixed capital in factories, principally for power-machines	£85,000	
——— power-machines, averaging 11 quarters wide	170,000	
——— hand-machines, averaging 9 qrs. wide	267,000	
Floating capital in stock on hand, power-owners	150,000	
——— hand-owners	250,000	
		£922,000
Capital in embroidering, preparing, and stock		250,000
Total capital employed in the trade		£1,932,000

The Value of the Materials used is as follows:—

6,000	lbs. cotton yarn, No. 130	at 7*s.* 6*d.*	£2,250	
10,000	,, 140	8*s.* 0*d.*	4,000	
75,000	,, 150	8*s.* 9*d.*	32,812	
85,000	,, 160	9*s.* 6*d.*	40,375	
95,000	,, 170	10*s.* 7*d.*	50,270	
350,000	,, 180	12*s.* 0*d.*	210,000	
250,000	,, 190	14*s.* 0*d.*	175,000	
220,000	,, 200	16*s.* 0*d.*	176,000	
60,000	,, 210	18*s.* 6*d.*	55,500	
9,000	,, 220	21*s.* 3*d.*	9,563	
1,160,000	lbs. yarn		755,770	
	20 per cent. discount		151,154	
	Net value of yarn			£604,616
	Value of silk used			40,000
	Wages, interest, wear and tear, &c.			732,234
	Value of rough goods			£1,376,850
200,000	pieces, gassed, 3*d.*			2,500
300,000	„ bleached, 10*d.*			12,500
300,000	„ dressed, 1*s.* 9*d.*			26,000
	One-third figured, cost			350,000
200,000	pieces, wide-nets, finished, 1*s.* 6*d.*			15,000
100,000	„ quillings, 3*s.*			15,000
				£1,797,850

The Number of Machines, exclusive of 165 not at Work, is 3,547, of the following descriptions:—

	Rotatory	Circular.	Lever.	Travers Warp.	Pusher-Grecian.	Total.
Plain	1,293	116	16	..	..	1,425
Quilling	247	116	761	..	..	1,124
Fancy	45	188	448	152	165	998
	1,585	420	1,225	152	165	3,547

The Parts of the Kingdom in which these Machines are employed, are—

	Plain.	Quilings.	Fancy.	Total.	Quantity of Yarn used.
					lbs.
Nottinghamshire	372	1,006	782	2,160	640,000
Leicestershire	207	37	99	343	100,000
Derbyshire	192	49	14	255	100,000
West of England	654	30	103	787	320,000
	1,425	1,122	998	3,545	1,160,000

The Quantity and Value of the rough Goods produced by the different kinds of Machines are:—

	Square Yards.	£.
Rotary	15,827,848	662,255
Lever	8,327,240	476,959
Circular	2,627,137	141,864
Pusher-Grecian	811,650	41,574
Travers Warp	325,188	54,198
	27,919,063 square yards	£1,376,850

The Number of Machine Owners is 837, of whom

302	possess only 1 Machine.	5	possess from 31 to 40 Machines.
203	,, ,, 2 ,,	4	,, ,, 41 to 50 ,,
212	,, from 3 to 5 Machines.	5	,, ,, 51 to 100 ,,
69	,, ,, 6 to 10 ,,	1	,, ,, 104 ,,
24	,, ,, 11 to 20 ,,	1	,, ,, 120 ,,
10	,, ,, 21 to 30 ,,	and 1	,, ,, 200 ,,

The Power of the different kinds of Machines as to the width of the Bobbin-Net produced, is:

Width stated in Quarters.	Rotatory	Circular.	Lever.	Pusher-Grecian.	Travers' Warp.	Total.
4-Quarter	. .	. .	1	5	2	8
5 ,,	12	8	4	24	3	51
6 ,,	26	52	110	61	117	366
7 ,,	12	57	148	25	20	262
8 ,,	496	240	321	18	9	1,084
9 ,,	19	32	113	3	1	168
10 ,,	313	25	192	16	. .	546
11 ,,	41	2	122	7	. .	172
12 ,,	622	4	184	6	. .	816
13 ,,	17	. .	12	. .	. .	29
14 ,,	4	. .	5	. .	. .	9
15 ,,	1	. .	2	. .	. .	3
16 ,,	22	. .	9	. .	. .	31
20 ,,	..	. .	2	. .	. .	2
	1,585	420	1,225	165	152	3,547

The wages of persons employed in the different branches of the manufacture vary according to the kind of work produced. The net earnings of

Men	are from 12*s.* to 35*s.*	per week, averaging about	16*s.*
Women	,, 3*s.* to 12*s.*	,, ,,	6*s.*
Children	,, 1*s.* 6*d.* to 5*s.*	,, ,,	2*s.* 6*d.*

Successive improvements in the arrangements of the machines had caused those first constructed—the Travers-warp machines—to go out of use, and a great number of them which had cost 300*l.* each, were sold and broken up for the value of the iron which they contained. Very recently it has been found, that by a slight alteration these machines may be adapted to the production of fancy nets; such of them as remained have been thus modified at a small expense, and employed for the production of fabrics of continually-increasing beauty and value.

Various estimates have been formed concerning the extent and value of the cotton manufacture in this kingdom. Mr. Dugald Bannatyne, in the Supplement to the "Encyclopædia Britannica," and Mr. M'Culloch, in the second edition of his "Dictionary of Commerce," have both estimated the value of goods annually manufactured at the sum of thirty-four millions, and Mr. M'Culloch estimates the capital employed at the same sum, viz.:

Capital employed in the purchase of the raw material	£4,000,000
Capital employed in the payment of wages .	10,000,000
Capital invested in spinning-mills, power and hand-looms, warehouses, stocks in hand, &c. .	20,000,000
	£34,000,000

The value of the goods annually produced is made up, according to Mr. M'Culloch's estimate, as follows:—

Raw material, 240,000,000 lbs. at 7*d*. per lb. .	£7,000,000
Wages of 800,000 weavers, spinners, bleachers, &c. at 22*l*. 10*s*. a-year each	18,000,000
Wages of 100,000 engineers, machine-makers, smiths, masons, joiners, &c. at 30*l*. a-year each .	3,000,000
Profits of the manufacturers, wages of superintendence, sums to purchase the materials of machinery, coals, &c.	6,000,000
	£34,000,000

Mr. Baines, who has been at considerable pains to ascertain the correctness of these estimates, has given the following statement, somewhat different in its details, but arriving substantially at the same result as was given by Messrs. Bannatyne and M'Culloch:—

Extent and Value of the British Cotton Manufacture in 1833.

Cotton wool imported		lbs. 303,656,837
——— consumed in the manufacture .		282,675,200
Yarn spun (deducting 1½ oz. per lb. for loss) .		256,174,400
Number of hanks spun (averaging 40 to the lb.)		hanks 10,246,976,000
Length of yarn spun (840 yards to the hank)		miles 4,890,602,182
Value of the cotton wool consumed, at 7*d.* per lb.		£8,244,693
Value of the cotton exports—goods	£13,754,992	
yarn	4,704,008	
	£18,459,000	
Value of manufactures consumed at home	12,879,693	
Total value of the manufacture .		£31,338,693
Capital employed in the manufacture . .		34,000,000
Quantity of cotton goods exported in 1832—		
White or plain cottons .	yds. 259,493,096	
Printed or dyed cottons . .	201,552,407	
		461,045,503
Number of persons supported by the manufacture		1,500,000
Number of operatives in the spinning and weaving—		
Factories—in England . . .	200,000	
in Scotland . . .	32,000	
in Ireland . . .	5,000	
		237,000
Wages earned by the factory operatives . .		£6,044,000
Power moving the factories—steam,	33,000 horses	
water,	11,000	
		horse power, 44,000
Number of spindles		9,333,000
Number of power-looms		100,000
Number of hand-loom weavers . . .		250,000
Wages earned by do.		£4,375,000

It is only within the last ten years that the silk manufacture can be said to have been firmly established in this country. Silk goods have, indeed, been made in England since the time of Edward the Third, and at various times measures intended to act for the protection of the manufacturers have been passed by the legislature. With this view, the importation of silk goods manufactured in other countries was strictly prohibited in 1765, and this system continued in force during a long series of years, such goods being expressly excluded from the benefit of the treaty of commerce concluded with France in 1786.

By this prohibitory law the English silk manufacturers were legally secured in the exclusive possession of the home market, from which, in the then imperfect condition of the manufacture, they would have been driven by the superior fabrics of foreign looms. Protected trades are almost invariably carried on without that regard to economy in the processes which is necessary, in order to provide for their extension by bringing the protected article within the reach of a larger number of consumers. Hence it arose that silk goods came to be looked upon as mere luxuries, the use of which must be confined to the richer classes; and this state of things was aggravated by their being thence considered fit objects of taxation. Heavy duties were therefore imposed upon the importation of raw and thrown silk; the manufactured goods made of a material, the cost of which was thus enhanced, continued beyond the reach of the multitude, and the manufacturers were consequently liable to considerable and violent vicissitudes from every change of fashion. On the other hand, those manufacturers feeling themselves secure in their legal monopoly of the home market, were without the necessary stimulus to improvement, and additional temptations were consequently held out to the smuggler to introduce the superior prohibited goods of France. The slow progress made in this branch of manufacture in England, under this system of duties and restrictions, may be seen from the following table of the quantities of raw and thrown silk imported at various times into the kingdom, from the year 1765, when the prohibition of foreign silk goods was enacted, until the end of 1835.

AVERAGE IMPORTATION.

	Raw.	Waste.	Thrown.	Total.
	lbs.	lbs.	lbs.	lbs.
1765, 6, and 7, commencement of prohibition......	352,000	. .	363,000	715,000
1785, 6, and 7, twenty years after prohibition.........	544,000	. .	337,000	881,000
1801 to 1812................	760,000	. .	350,000	1,110,000
1815, 16, and 17, first years of peace, and fifty years after prohibition was commenced	1,095,000	27,000	293,000	1,415,000
1821, 22, and 23, three last years prior to the change of system	1,970,000	74,000	355,000	2,399,000

	Raw.	Waste.	Thrown.	Total.
	lbs.	lbs.	lbs.	lbs.
1814......	1,504,235	29,234	586,505	2,119,974
1815......	1,069,596	27,971	377,822	1,475,389
1816......	873,414	4,162	210,758	1,088,334
1817......	1,343,051	49,055	294,553	1,686,659
1818......	1,444,881	86,940	391,166	1,922,987
1819......	1,446,097	71,331	331,125	1,848,553
1820......	1,622,799	94,883	309,953	2,027,635
1821......	1,864,513	105,047	360,248	2,329,808
1822......	1,993,764	64,921	382,878	2,441,563
1823......	2,051,895	52,362	363,864	2,468,121
1824......	3,414,520	133,257	463,271	4,011,048
1825......	2,848,506	195,910	559,642	3,604,058
1826......	1,964,188	. . .	289,325	2,253,513
1827......	3,759,138	. . .	454,015	4,213,153
1828......	4,162,550	. . .	385,262	4,547,812
1829......	2,719,962	. . .	172,239	2,892,201
1830......	3,771,969	485,013	436,535	4,693,517
1831......	3,035,832	762,258	514,240	4,312,330
1832......	3,391,721	651,594	329,932	4,373,247
1833......	3,838,795	654,381	268,367	4,761,543
1834......	3,346,751	1,009,932	165,768	4,522,451
1835......	4,151,008	1,382,872	254,578	5,788,458

In the years 1826 to 1829 the waste is included with the raw silk.

During all the period embraced in this table, up to 1824, the silk trade of England was one continued alternation of prosperity and distress. That the former condition prevailed is proved, however, by the increasing amount of the manufacture, comparing one period with another in the course of years. In 1824 the system here described was wholly changed. The high duties of 4*s*. per lb. imposed upon raw silk, and of 14*s*. 8*d*. per lb. upon thrown silk, were reduced; the former to 3*d*. and the latter to 7*s*. 6*d*. per lb. These rates have since been further reduced; that on raw silk to 1*d*., and that on thrown silk to 3*s*. 6*d*. per lb.: a regulation of the Custom-house permits the latter duty to be drawn back upon the exportation of the goods into which foreign thrown silk is converted. At the same time, the system of prohibition against the importation of foreign manufactured silk goods was prospectively repealed, and a scale of duties adopted, under which such goods might be imported; but in order to afford the silk manufacturers the opportunity of disposing of their stocks of goods already made, and of otherwise preparing for foreign competition, such importations were not allowed to take place until after the 5th of July, 1826.

An immediate and great increase was made in the consumption of silk goods by this reduction in the cost of the material. Every throwing-mill and every loom was put in constant employment, and a great increase was made in the number of these establishments. The number of throwing-mills in different parts of the country was raised from 175 to 266, and the number of spindles from 780,000 to 1,180,000; yet, notwithstanding this additional productive power, it was not possible for the throwsters to keep pace with the demands of the weavers, who were frequently kept waiting during whole months for silk to enable them to complete the orders which they had in hand.

This full tide of prosperity was checked by the commercial panic which occurred at the close of 1825; and as the admission of foreign-made silk goods first took place during a time of general depression, a great clamour was raised on the part of the home manufacturers against the relaxation, which was said to be the chief, if not the only cause of the distress that had overtaken the trade. This distress, however, soon passed away, so that in the year 1827 a larger quantity of silk was manufactured in this country than had ever before passed in an equal time through our looms. It is not by selecting a single year that a proper judgment can be formed upon such a subject, but the foregoing table, which details the importations of twenty-two years, ten of which were years of unqualified prohibition, is sufficiently extensive to afford means for deciding the degree of advantage which has attended the relaxation. It will be seen from this table, that, in the ten years preceding 1824, the quantity of raw and thrown silk used by our manufacturers amounted to 19,409,020 lbs., being an average of 1,940,902 lbs. per annum; and that, in the twelve years following the change of system, the quantity used has been 49,973,331 lbs., or 4,164,444 lbs. per annum, being an increase over the average of the former period of 114 per cent.

It is further remarkable that notwithstanding the great increase in the quantity of silk employed in our looms, the quantity of thrown silk imported has not at all augmented during the last sixty years, but, on the contrary, has of late sensibly diminished. The spur of competition has driven forward the manufacture in both its branches. Improved machinery has been introduced into our throwing-mills, the effect of which has been to lessen by more than one-half the cost of the process; and by the adoption and improvement of the ingenious machinery of Jacquard, our weavers are now enabled to produce fancy goods, the quality of which is, with a few exceptions of little importance, fully equal, and, as regards some sorts, superior, to the quality of goods made in France, although the cost of production is not yet reduced to the level of that country.

When the prohibition to the importation of foreign silk goods was removed, a duty was imposed of 30 per cent. *ad valorem*, which was soon after altered to specific rates per pound, so calculated upon different kinds of goods as to be equal, in most cases, to 30 per cent. upon the presumed value, this rate being assumed as the *maximum* of protection which in any case it was desirable to afford to the English manufacturers. Apart from all considerations of a *maximum* as between the consumers and manufacturers in this country, however, it was found impossible to adopt any higher scale of protection, on account of the encouragement which would thereby be given to smugglers, and, in fact, while arranging the specific duties chargeable on the weight of the goods, it was on this account found necessary to fix the rate upon plain goods on a scale equal to no more than 25 per cent. on the value, while the higher per centage was retained upon other goods, the smuggler's charge on which was higher. The reason why this charge was less upon plain than upon fancy fabrics was this—the latter, being made to answer the immediate demands of ever-varying fashion, were required by the purchasers to be delivered to them without delay, while plain goods, which would be equally valuable at all times, could be kept back by the smuggler to a more favourable opportunity for eluding the government officers.

For some time before and after the opening of our markets to the fabrics of other countries, it was firmly believed, and loudly asserted by many persons experienced in the trade, that such a measure would bring certain ruin upon the silk manufacturers of England, who, being accustomed to work for only the higher ranks of society, had constantly experienced the evils attendant upon a limited market, and had been kept in dread of competition from without; the successful adventures of contraband dealers having, under such circumstances, been frequently productive of temporary stagnations, which involved the manufacturers and their workmen in distress. The experience of a few years has served to show how groundless were these fears; that by reducing the prices of their goods, which they were enabled to do through the reduction of the duty and the improvements in their machinery, the market would be so extended as to include among their customers by far the larger part of the population; and that, stimulated by the rivalry of foreign manufacturers, such improvements would be effected in the quality of our fabrics, as would fit them for successful competition with the most beautiful productions of foreign looms. It is strictly correct to assert, that with free permission to import upon a moderate scale of duties, our silk manufacturers suffer less at present from foreign competition, than they did in the days of prohibition, when the quantity of smuggled goods amounted to only a small proportion of that now legally imported. In 1810, when the smuggler's difficulties were increased by the war, the quantity of contraband silks brought into consumption in this country was felt to be so injurious to the manufacturers, that they formed themselves into an association for the prevention of smuggling. Again, in 1818 and the following year, numerous petitions were presented to Parliament by the silk-weavers of Spitalfields and of Coventry, complaining of this illegal competition, and stating that, by means of it, "The demand for manufactured goods had for some time past so decreased, as to afford serious ground of alarm to the manufacturers, and to threaten the existence of the silk manufacture of this country." In one of these petitions it was stated, that operative weavers who used to earn from 30*s*. to 40*s*. per week, were at that time able to earn no more than 10*s*. or 11*s*.

The fact last stated was by no means peculiar to the time embraced in the petition. The system under which the trade had been regulated for more than half a century had familiarized the country with the complaints of the silk weavers, who were constantly liable, on any change of fashion, to be thrown out of employment; and the high rate of whose wages when fully employed, being unaccompanied by prudent preparation for a fall in wages, only served, by multiplying their wants, to render the reverse the more distressing when it came.

Since the year 1824, when the shackles were removed from the trade, the silk manufacture in all its branches has spread itself into various districts, and is conducted upon a scale, and according to principles which admit of so great a degree of economy, as not only to place the products of our silk looms within the reach of the humbler classes of the community in this country, but to enable us successfully to compete in other markets with goods produced in foreign countries. The declared value of British manufactured silk goods exported from the United Kingdom in each year since 1820, has been as follows:—

1820	£371,755	1828	£255,870
1821	374,473	1829	267,931
1822	381,703	1830	521,010
1823	351,409	1831	578,874
1824	442,596	1832	529,990
1825	296,736	1833	737,404
1826	168,801	1834	636,419
1827	236,344	1835	972,031

It is, perhaps, not the least surprising of the effects which have followed the total alteration of our system in regard to this manufacture, that this country now regularly exports silk goods to a considerable value to France: these exports amounted, in 1832, to 57,187*l.*, in 1833 to 76,525*l.*, and in 1834 to 60,346*l.*, forming two-fifths of the exports made to the whole of Europe. The most considerable part of our export of silks is made to our North American Colonies, the West India Islands, and the United States of America.

The number of silk-mills in the townships of Manchester and Salford, which in 1820 was no more than five, had increased, in 1832, to sixteen.

The following table, given on the authority of the Inspectors of Factories, will show the number and distribution of silk factories, and the number of persons employed in them at the beginning of 1835.

Statement of the Number of Silk Factories in operation in the different Parts of the United Kingdom, with the Number and Ages of the Persons employed therein.

COUNTIES, &c.	Number of Factories.		Between 8 and 12 Years.		Between 12 and 13 Years.		Between 13 and 18 Years.		Above 18 Years.		Total number of Persons employed.		
	At Work.	Empty.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Total.
England.													
Berks	3	..	10	36	6	16	7	69	15	66	38	187	225
Bucks	2	..	17	48	6	19	12	41	2	12	37	120	157
Chester	88	24	1,124	1,428	364	426	1,323	1,876	1,757	2,408	4,568	6,138	10,706
Derby	15	..	162	142	73	124	185	449	466	1,124	886	1,839	2,725
Devon	4	..	24	75	4	27	9	126	10	221	47	449	496
Dorset	5	..	4	70	2	20	1	70	14	101	21	261	282
Essex	8	..	49	155	27	107	69	532	90	498	235	1,292	1,527
Gloucester	2	..	4	32	..	4	1	28	2	13	7	77	84
Hants	2	..	9	44	5	21	6	68	29	116	49	249	298
Herts	7	..	193	237	57	77	120	222	64	148	434	684	1,118
Kent	1	..	..	6	..	1	..	12	..	23	..	42	42
Lancaster	23	..	341	784	202	365	405	1,256	631	1,054	1,519	3,459	5,038
Norfolk	4	..	5	70	2	125	19	440	99	529	125	1,164	1,289
Northampton	1	..	..	..	no re	turn.	..	..	..	..	..	..	..
Nottingham	3	..	55	28	18	9	37	47	20	122	130	206	336
Oxford	1	..	2	3	2	..	3	8	3	21	10	32	42
Somerset	23	..	231	309	55	125	95	471	53	551	434	1,456	1,890
Stafford	11	1	146	206	40	78	108	317	264	304	558	905	1,463
Suffolk	1	..	..	6	..	13	..	50	1	40	1	109	110
Surrey	2	..	9	13	..	..	9	43	17	34	35	90	125
Warwick	5	..	9	6	5	8	23	28	27	25	64	67	131
Wilts	4	..	8	71	2	25	15	148	9	179	34	423	457
Worcester	8	..	33	66	2	31	4	55	18	79	57	231	288
York, W. Riding	8	..	23	36	66	53	145	190	418	187	652	466	1,118
Total, England	231	25	2,458	3,871	938	1,674	2,596	6,546	4,009	7,855	10,001	19,946	29,947
Wales	..	..	..	..	..	..	..	..	..	..	..	..	..
Scotland	6	..	28	52	14	37	40	244	103	168	185	501	686
Ireland	1	..	..	2	..	..	..	25	2	20	2	47	49
Total, United Kingdom	238	25	2,486	3,925	952	1,711	2,636	6,815	4,114	8,043	10,188	20,494	30,682

Except in the preliminary branch of the manufacture —throwing—it has not hitherto been found practicable to apply machinery for simplifying the processes of manufacturing the finer kinds of silk goods, or for economizing the cost of their production. For this reason, the improvements effected in the quality of silken fabrics are more the result of individual effort, than the improvements in those other branches of manufacture to which mechanical invention has been so successfully applied in this country. Among the causes to which the continued superiority of French silk weavers, in some articles of their manufacture, must be attributed, may be instanced the kind of education which they receive, and by means of which so many among those who are engaged in the labour of weaving—an operation which among us is mere drudgery—are enabled to contribute to the perfecting of their art, by the invention of new patterns. As regards the texture only of silk fabrics, English-made goods are now fully equal to the best that are produced by our neighbours. The greater cheapness of the necessaries of life in France, as compared with England, gives an advantage, in point of price, to the French weaver over his English competitor; and this advantage is of course the greater in those descriptions of goods into the cost of which labour enters in the greatest proportion—such as gauzes, and other light and fancy fabrics. We have seen, however, that as regards other kinds of silk goods, our manufacturers are already enabled to compete with their formidable rivals in markets which are equally open to both, and that we are, in fact, exporting continually the produce of our silk-looms to France itself.

It will scarcely be affirmed that, in this respect, the manufacturers of England would have stood in so advantageous a position had the old prohibitory system been maintained. Up to the very moment of the legal admission of foreign silk goods no improvement was perceptible in the quality or fashion of our own; by the most cursory glance, the difference between the fabrics could be distinguished, and yet, notwithstanding the facility thus afforded for the detection of contraband goods, the ingenuity of the smuggler was at all times successful to insure their introduction; and this irregular competition was the more ruinous, as the foreign goods had not been subjected, in the country of manufacture, to the heavy impost then placed upon the raw material in England.

The linen manufacture has very long been prosecuted in England, and about the end of the seventeenth century was indirectly encouraged in Ireland by an act of legislative oppression, such as it would not be possible to enforce in this country at the present day.

The woollen manufacturers of England, alarmed at the rapid progress then being made in Ireland in that branch of industry, induced the Houses of Parliament to interfere with the King (William III.) for its suppression. In his answer to their address, the King made the following promise: "I shall do all that in me lies to discourage the woollen manufacture in Ireland, and encourage the linen manufacture, and to promote the trade of England." Nor was this an empty promise. Through the interference of the King with the Irish Houses of Parliament, an Act was passed prohibiting the exportation of all woollen goods from Ireland, except to England; an exception which could not operate to the relief of the Irish manufacturer, since prohibitory duties were already laid against their importation into this country.

As some compensation for this act of injustice, various regulations were at different times made for the encouragement of the linen manufacture in Ireland; although it is doubted whether those regulations have, in reality, effected anything towards the establishment of the manufacture upon a healthy footing. Among other modes of encouragement, a bounty was paid upon the exportation of linen from Ireland, which was in force for more than a century, and ceased only in 1830.

It is not possible to trace, with any certainty, the growth of the linen manufacture in either part of the kingdom. Cotton and silk being productions of foreign growth, the quantities which pass through our Customhouses form, of course, a correct measure of the growth of those manufactures as far as quantity is concerned; but flax is a production of our own soil, as well as an article of foreign commerce, and the quantity imported from abroad gives therefore only an imperfect test of the quantity of linen produced in our looms. The immense extension of our cotton fabrics has necessarily limited the growth of our linen manufacture, yet there are many reasons for believing that it has, notwithstanding, been considerable.

The following table will show the quantities of linen goods which were exported from Ireland in different years, from 1800 to 1825; subsequently to which year no account has been taken at the Custom-houses of either England or Ireland, of the commercial intercourse between the two parts of the kingdom.

Years.	To Great Britain. Yards.	To Foreign Parts. Yards.	Total.
1800 . .	31,978,039	2,585,829	34,563,868
1802 . .	33,246,943	2,368,911	35,615,854
1804 . .	39,837,101	3,303,528	43,140,629
1806 . .	35,245,280	3,880,961	39,126,241
1808 . .	41,958,719	2,033,367	43,992,086
1810 . .	32,584,545	4,313,725	36,898,270
1812 . .	33,320,767	2,524,686	35,845,453
1814 . .	39,539,443	3,463,783	43,003,226
1815 . .	37,986,359	5,496,206	43,482,565
1816 . .	42,330,118	3,299,511	45,729,629
1817 . .	50,288,842	5,941,733	56,230,575
1818 . .	44,746,354	6,178,954	50,925,308
1819 . .	34,957,396	2,683,855	37,641,251
1820 . .	40,318,270	3,294,948	43,613,218
1821 . .	45,519,509	4,011,630	49,531,139
1822 . .	43,226,710	3,374,993	46,601,703
1823 . .	48,066,591	3,169,006	51,235,597
1824 . .	46,466,950	3,026,427	49,493,377
1825 . .	52,559,678	2,553,587	55,113,265

It will be seen from the next statement, that a large proportion of the exports of linen from Ireland to Great Britain has been re-exported to foreign countries.

British and Irish Linen and Sailcloth exported from the United Kingdom, in each year from 1820 to 1833.

Years.	British Linen.	Irish Linen.	British Sailcloth.	Irish Sailcloth.
	Yards.	Yards.	Ells.	Ells.
1820	24,066,914	12,455,419	1,226,335	18,117
1821	28,199,765	15,408,561	1,339,164	12,153
1822	33,762,229	15,931,939	1,259,919	16,039
1823	34,624,512	16,765,928	1,206,715	32,239
1824	43,879,893	17,933,195	1,593,291	66,185
1825	33,643,655	16,023,268	1,879,506	51,104
1826	23,619,428	10,868,407	4,343,924	55,178
1827	38,280,766	14,022,496	2,211,529	52,413
1828	44,555,341	11,924,603	2,962,393	83,903
1829	43,499,268	11,924,918	1,768,093	51,256
1830	46,232,243	13,244,269	1,922,211	32,550
1831	50,799,723	14,738,358	2,928,464	28,185
1832	37,347,193	9,960,347	2,182,367	41,150
1833	51,393,420	9,561,277	2,229,777	48,035

Within the last few years this proportion has been continually increasing, owing to the greater facility of intercourse offered by steam vessels, which occasions a greater portion of the general export trade of the United Kingdom to be carried on from the ports of England.

The estimated value of linen goods sold in the different linen markets of Ireland, in each of the years from 1821 to 1824, was stated as follows, on the authority of the inspectors appointed by the Linen Board in Dublin, and the statement was given in the Appendix to the Report upon the Linen Manufacture of Ireland, made by a Committee of the House of Commons in 1825. There is not any document in existence which brings this information down to a later date.

	1821.			1822.			1823.			1824.		
	£	s.	d.	£.	s.	d.	£.	s.	d.	£.	s.	d.
Ulster.....	2,066,122	16	8	2,127,529	16	4	1,968,180	16	6	2,109,309	10	2
Leinster...	285,354	14	9	336,698	12	0	207,638	18	3	192,888	4	9
Munster...	68,870	13	9	82,202	13	1	95,195	8	3	110,421	0	3
Connaught	117,664	14	0	130,914	7	4	140,856	13	5	168,090	9	7
	2,538,012	19	2	2,677,345	8	9	2,411,871	16	5	2,580,709	4	9

It was not until quite the end of the last century that flax spinning-mills were first erected in the north of England and in Scotland. Before that time the operation of spinning was altogether performed by women in their own dwellings. Up to 1814 the yarn spun in mills was sold to weavers or to dealers who acted as middle men between the spinners and weavers; but at the date last mentioned some spinners became also manufacturers of linen. It was at a still more recent period that power-weaving was applied to the making of linen fabrics in England and Scotland, and up to the present moment flax-spinning machinery has not been established in Ireland upon a scale sufficiently large to supply the looms of that country, to which considerable quantities of linen yarn are sent from the spinning-mills of Yorkshire.

In Scotland, this branch of manufacture was comparatively small before the peace in 1815. The town and neighbourhood of Dundee has been the scene of a most remarkable increase in the linen manufacture since the time just mentioned. In 1814, the quantity of flax imported into that town for use in the manufactories did not exceed 3000 tons, but in the year which ended 31st May, 1831, the import was more than 15,000 tons, besides upwards of 3000 tons of hemp. The continued progress of the manufacture in this district is shown by the fact that, in the year ending 31st May, 1833, the imports had further increased to 18,777 tons of flax, and 3,380 tons of hemp. The quantity of linen, sailcloth, and bagging, into which this material was made, and which was shipped from Dundee in the same year, amounted to 60,000,000 yards, being probably equal to the entire shipments made from the whole of Ireland.

The improvements made in the flax-spinning machinery in this country are rendered sufficiently apparent by the following statement taken from the Official Tables of Revenue, Population, &c. of the United Kingdom (Part III., page 395), in which volume it was inserted on the authority of the oldest and largest establishment for flax-spinning and weaving in Leeds.

Statement of the Prices of Linen Yarn; and of Canvass (No. 37); and of the Wages paid at Leeds for Weaving the same, in each Year, from 1813 to 1832, inclusive.

	1813	1814	1815	1816	1817	1818	1819	1820	1821	1822	1823
Average Selling Price of an Average Bundle of Yarn	28/6	29/5	27/7	21/	19/10	21/4	18/10	17/7	16/2	16/8	15/7
Av. Size of such Av. Bun. estimated in leas of 300 yds. pr. lb.	11·1	11·1	11·4	11·2	11·4	11·3	11·6	11·3	12·4	12·6	12·9
Wages of weaving a piece of Canvass, No. 37, 36 in. wide, 16 thds. warp, 17 weft, pr. in.	2/8	2/8	2/10	2/8	2/6	2/8	2/8	2/8	2/8	2/8	2/8
Selling Price of a piece of Canvass, No. 37 . . .	30/	30/	28/	22/	20/6	21/3	23/	23/	20/6	20/	21/

	1824	1825	1826	1827	1828	1829	1830	1831	1832	1833	
Average Selling Price of an Average Bundle of Yarn	13/6	14/4	12/6	11/	11/5	10/1	10/10	11/1	10/3	10/9	
Av. Size of such Av. Bun. estimated in leas of 300 yds. pr. lb.	17·4	21·5	18·5	20·9	22·5	25·	26·6	27·6	31·5	37·1	
Wages of weaving a piece of Canvass, No. 37, 36 in. wide, 16 thds. warp, 17 weft, pr. in.	2/6	2/7	2/6	2/6	2/6	2/6	2/6	2/6	2/6	2/6	
Selling Price of a piece of Canvass, No. 37 . . .	19/	19/3	18/	16/6	15/	16/	17/	19/	18/6	18/	

Statement of the Weekly Rate of Wages paid in a Flax Spinning Mill near Leeds, in the Year 1832.

				s.	*d.*
66	Children,	9 to 11 years old	Average	3	1½
160	„	11 to 12 „	„	3	4¾
144	„	13 „	„	3	9½
127	„	14 „	„	4	2¼
113	„	15 „	„	4	9½
99	Persons,	16 „	„	5	6
100	„	17 „	„	5	10¾
80	„	18 „	„	6	6
58	„	19 „	„	7	4
48	„	20 „	„	7	9½
204	„	21 „	„	8	2¾
	„	21 and upwards	„	16	7¾

The above rates have been nearly stationary during the last twenty years.

It will be seen from the foregoing table that the length of a pound of yarn of average fineness was in 1813 and 1814 only 3,330 yards, and that in 1833 yarn of the average quality contained 11,170 yards. During that time the price of such average yarn has fallen from 29*s.* 5*d.* to 10*s.* 9*d.* per bundle: so that, taking the quantity into the account, the price of yarn has fallen in twenty years to one-ninth of the price which it bore at the close of the war, the price of the raw material having fallen in the same time about one-half.

The improvements made in the operation of flax-spinning in England are rendered apparent in a very important manner, by the fact that we are now large exporters of linen-yarn to Ireland, and even to France: the shipments to the latter country in 1833 amounted to 867,288 lbs., and in 1834 to 1,430,369 lbs. This is a new branch of trade, for which we are altogether indebted to the perfection of our spinning machinery.

Hitherto, this country has been a constant importer of linen-yarn, but there is at present every appearance of this state of things being entirely changed. So recently as 1827 our weavers used very nearly four millions of pounds of foreign yarn, but in each subsequent year this quantity has been diminished, until in 1834 it amounted only to about one million and a half of pounds. Our principal foreign customer for linen fabrics is the United States of America: the exports to that country in 1834 amounted to 25,810,656 yards, the declared value of which was 997,682*l*.

The following table exhibits a considerable increase in the consumption of foreign-grown flax during the last ten or fifteen years; but it is probable that the growth of the article in this country has, in the mean time, experienced some diminution. It has been already mentioned that the importations of flax do not afford any accurate test of the growth or extent of the manufacture.

	Cwts.	
1820	376,170	The duty payable during these years was at the rate of 10*l*. 14*s*. 6*d*. per cwt. on dressed Flax, and 5*d*. on undressed Flax.
1821	491,582	
1822	607,540	
1823	553,599	
1824	739,651	
1825	1,018,837	Duty reduced to 4*d*. per cwt. upon dressed and undressed.
1826	697,488	Do. 3*d*. ,,
1827	896,889	Do. 2*d*. ,,
1828	882,289	Do. 1*d*. ,,
1829	909,709	
1830	955,112	
1831	918,883	
1832	984,869	
1833	1,112,190	
1834	794,272	
1835	742,665	

The finest kind of linen, known under the name of cambric, is imported by us from France. From 70,000 to 80,000 pieces of cambric, including pocket handkerchiefs, are every year introduced; but it appears probable that still further improvements in the spinning processes may be effected, which will enable our weavers to produce goods equal to any made in the looms of France; a circumstance which is now at least as probable as the fact would have appeared fifty years ago, that we should ever furnish the natives of India with the finest muslins, instead of being dependent upon their industry for the supply of our markets.

The extent of that part of our linen manufacture which is conducted in factories, which is the only part as to which statistical details are procurable, upon which full reliance can be placed, will be seen from the following table, compiled from returns made by the Inspectors of Factories in 1835.

Statement of the Number of Flax Factories in operation in the different Parts of the United Kingdom, with the Number and Ages of Persons employed therein.

COUNTIES, &c.	Number of Factories at Work.	Between 8 and 12 Years.		Between 12 and 13 Years.		Between 13 and 18 Years.		Above 18 Years.		Total Number of Persons employed.		
		Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Total.
England.												
Cumberland	7	..	1	1	8	4	89	20	116	25	214	239
Derby	2	5	4	7	2	14	16	5	31	31	53	84
Devon	4	..	..	5	5	8	34	17	73	30	112	142
Dorset	21	11	14	26	40	61	202	78	278	176	534	710
Durham	6	2	..	60	27	47	172	90	203	199	402	601
Hants	2	..	2	3	5	4	32	4	41	11	80	91
Kent	1	..	..	..	..	29	15	7	11	36	26	62
Lancaster	18	65	60	265	260	386	811	469	708	1,185	1,839	3,024
Northumberland	2	..	..	6	23	7	68	35	103	48	194	242
Nottingham	1	..	..	7	1	1	..	..	..	8	1	9
Oxford	1	1	..	..	2	2	10	1	..	4	12	16
Salop	1	24	16	45	37	124	173	118	149	311	375	686
Somerset	13	17	13	13	9	42	108	37	128	109	258	367
Westmoreland	4	16	14	11	7	38	79	54	75	119	175	294
Wilts	1	..	..	..	2	..	14	2	6	2	22	24
York, W. Riding	64	333	303	592	735	1,145	2,318	1,593	2,419	3,663	5,775	9,438
N. Riding	4	13	7	7	10	17	51	21	38	58	106	164
Total, England	152	487	434	1,048	1,173	1,929	4,192	2,551	4,379	6,015	10,178	16,193
Wales	..	..	..	..	..	..	..	..	..	..	..	..
Scotland	170	104	175	609	918	1,129	3,064	1,550	5,860	3,392	10,017	13,409
Ireland	25	1	15	125	199	399	1,308	463	1,171	988	2,693	3,681
Total, United Kingdom	347	592	624	1,782	2,290	3,457	8,564	4,564	11,410	10,395	22,888	33,283

It will be observed, on examining the statements already given of the number and ages of persons employed in the cotton, woollen, flax, and silk factories respectively throughout the kingdom, that the proportion of very young persons employed in the silk-mills is much greater than it is in any of the other three branches, and that the proportion of adults is consequently much smaller. The actual proportions in which persons of different ages are employed in each of these four branches of industry, are as follows:—

Ages.	Cotton.	Woollen.	Flax.	Silk.
8 to 12	3·7	6·7	3·7	20·9
12 to 13	9·3	12·	12·2	8·7
13 to 18	29·8	29·8	36·1	30.8
Above 18	57·2	51·5	48·	39·6
	100·	100·	100·	100·

The proportions in which males and females are employed are:—

	Cotton.	Woollen.	Flax.	Silk.
Males	45·7	52·5	31·2	33·2
Females	54·3	47·5	68·8	66·8
	100·	100·	100·	100·

The imperfection of the returns in regard to the mechanical power used in factories does not allow of any precise calculations in regard to the proportions in which that power is used, as compared with the number of persons employed in each branch. The following abstract contains all the information of this nature that can be gathered from the returns hitherto given:—

Description of Factories.	Number of Factories, the Power of which is given.	Number of			Horse-power of Steam-Engines and Water Wheels.			Number of Horses' Power actually Employed.	Number of Persons Employed in Factories, the Power of which is given.
		Steam Engines.	Water Wheels.	Total.	Steam.	Water.	Total.		
Cotton .	987	1,000	479	1,479	27,433	6,575	34,008	30,698	172,605
Woollen	740	528	462	990	10,300	4,703	15,003	13,536	46,685
Flax . .	90	55	55	110	1,746	528	2,274	2,204	12,910
Silk . .	131	118	41	159	1,343	332	1,675	1,460	18,390
	1,948	1,701	1,037	2,738	40,822	12,138	52,960	47,898	250,590

From this it appears, that the number of persons employed for each mechanical horse-power is

In Cotton Factories	5⅝	
,, Woollen ,, ...	3½	nearly.
,, Flax ,, ...	5⅞	,,
,, Silk ,, ...	12⅝	

The larger proportion in the silk mills might be expected, from the greater number of young children which they contain.

CHAPTER III.

MANUFACTURES.

WOVEN FABRICS.

Progress in various Foreign Countries.

France—Woollen manufacture—Imports and production of wool—Protection against foreign manufactures—Cotton manufacture—Disadvantages through the duties on foreign coal and iron—Extent of manufacture—Quantity of cotton imported since 1787—Export of woollen and cotton goods—Silk manufacture—Its extent and progress—Exports—Germany—Cotton manufactures—Prussian commercial league—Russia—Swiss Cantons.

HAVING thus inquired into the progress of the nation as regards that great class of its manufactures—woven fabrics, it may be desirable to see in what degree other countries have kept pace with us in the developement of this branch of industry. The materials for such an inquiry are generally scanty and unsatisfactory. Statements are, indeed, frequently put forward to the world from various quarters with an air of confidence, which pretend to give the most ample information upon different branches of this subject, but every one who has been accustomed to collate and compare those statements, has generally found reason to distrust their correctness. It is but seldom, indeed, that documents of this kind are furnished upon competent authority; and where this is wanting, it will always be more safe for the inquirer to depend rather upon collateral circumstances, as to the truth of which no doubt exists, than to rely upon unsupported assertions, however plausibly they may be offered.

The French Government, urged to an alteration of the restrictive system, by which it has sought to foster its manufactures, has lately instituted an inquiry into the past and present effects of that system, and in the course of that inquiry has collected together some documents which bear the stamp of authenticity, and which may therefore be used with confidence in the comparison which it is proposed to make, as to the manufacturing progress of France and England. A considerable number of authentic statements of the same nature have also been collected, with great industry, by Dr. Bowring, and presented to Parliament in his interesting reports on the commercial relations of the two countries; so that it will hardly be necessary to have recourse to any unofficial statement in this part of our inquiry.

The woollen manufacture has long been one of the staples of France, and the excellent quality of French cloths has been generally acknowledged. In some branches of the manufacture the French clothiers have taken the lead; and to this day their finer woollens find a market in every quarter of the globe. Under these circumstances, there can be no doubt that the quantity of woollen cloth manufactured in France has increased with the growth of the population; and it appears from a table inserted in the recent "Enquête" published by the French Government, that the quantity of these goods exported has also materially increased during the last half century, although it is not shown that any progress has been made in this respect since the termination of the war with England. These facts are shown by the following statement of the quantity and value of wool imported, and of woollen goods exported, in the years 1787-8 and 9, and in each year from 1812 to 1833:—

Years.	Wool Imported.		Woollens Exported.	
	Weight.	Value.	Weight.	Value.
	Kilogrammes.	Francs.	Kilogrammes.	Francs.
1787	7,842,085	14,391,500	. . .	21,811,900
1788	6,780,747	13,544,400	. . .	23,560,200
1789	6,860,087	17,061,000	. . .	25,709,000
1812	7,308,380	30,627,885	1,761,281	38,303,193
1813	5,354,455	20,303,973	1,289,517	27,539,642
1814	1,832,472	7,699,057	700,843	13,711,202
1815	2,431,269	5,348,792	1,336,801	38,662,677
1816	5,785,675	8,266,084	2,202,368	68,007,529
1817	5,612,891	16,015,862	1,508,012	49,862,593
1818	9,854,231	25,169,916	1,389,818	44,971,455
1819	3,428,420	10,612,687	1,350,795	40,615,461
1820	4,912,291	8,350,895	1,494,137	43,383,660
1821	6,876,661	11,690,328	1,369,746	39,750,591
1822	9,117,731	15,500,142	1,101,615	40,528,113
1823	5,481,659	9,318,820	1,018,261	33,082,211
1824	4,409,956	7,496,925	1,141,268	36,436,512
1825	4,639,108	7,886,484	1,182,929	37,821,130
1826	6,435,228	10,939,887	982,849	29,848,406
1827	7,381,857	11,130,922	1,029,100	27,369,125
1828	7,586,889	13,390,515	1,058,922	30,025,776
1829	5,749,194	9,275,611	1,196,744	31,606,464
1830	7,214,939	12,871,932	1,029,472	27,690,138
1831	3,836,207	5,253,089	1,050,457	28,088,716
1832	4,621,594	7,861,821	1,434,026	36,306,600
1833	9,305,702	19,139,629	1,546,991	38,098,047

It appears from this table, that the production of wool in France must have kept pace with the wants of the increasing population, the importations being not greater now than they were in the three years ending with 1789, while the manufactured goods exported are considerably larger in amount now than they were at that time. To enable the French clothiers to compete successfully with us in foreign markets, a bounty on exportation is paid by the government equal to 13½ per cent. on the value; which payment is calculated to be equal to the duty imposed upon foreign wool, for the benefit of the agriculturists of that country. The design of that duty was to raise the price of wool of native growth; and it was thence thought necessary to protect the manufacturers against the competition of countries where the raw material is cheaper, by prohibiting the importation of woollen cloths. It may be useful to inquire, in a few words, what has been the effect of this double protection.

It is admitted in the reply made by the Chamber of Commerce of Carcassone, in November, 1834, to the circular letter addressed by the Minister of Commerce to different commercial bodies, in September of that year, that the immediate effect of the imposition of the duty of 33 per cent. on foreign wool, proved the very contrary of that which was intended; that, in fact, it lowered the price of native wool from 12 to 15 per cent., which reduction progressively increased, until in 1832 the diminution of value amounted to 25 per cent. The duty has since been reduced to 22 per cent., but without in any respect influencing the price of French-grown wool. The reason for this result, so contrary to the intentions of the legislature, has been thus given:—" Foreign manufacturers, no longer meeting the competition of French buyers in the countries of production, have been able to buy their material of manufacture at cheaper rates, and consequently have afforded their goods to foreign consumers, previously supplied by France, at a proportionate reduction of price. Deprived of wool of the fine qualities necessary for producing the cloth which before had been made by them for exportation, the French clothiers have had their market limited chiefly to their own country; one consequence of which has been, that their purchases of native wool have been diminished, by the quantity formerly mixed with foreign wool for the production of the cloths exported." According to this view, it was not likely that the growers of wool should be benefited by the duty imposed for their encouragement, and this opinion has been fully borne out by the fact as already stated. That the manufacturers have not, on their part, profited by the prohibition of foreign woollens, is rendered fully evident by the constant complaints which they have made of a falling off in their trade.

In 1814 protection was continued to the manufacturers, with the understanding that the prohibition should remain for no longer than two years; that time being considered, under the altered circumstances of the commercial world, necessary for the establishment of their prosperity. Twenty years of strict monopoly have since passed, and the complaints of the manufacturers are more pressing than they were in 1814. The reason for this continued state of adversity in regard to branches of industry for which France enjoys every facility, is thus stated in the report of Messrs. Villiers and Bowring on the commercial relations between France and England. "Raw produce being protected, at the demand of the French producer, and all articles necessary to existence at the demand of the French agriculturist, high prices have lessened consumption, while the external demand has been considerably diminished. There are scarcely any protected articles in which France can now sustain a competition with other countries; and the improvement resulting from competition, which is as valuable to the manufacturer as it is to the public at large, is completely checked. The manufacturers themselves, however, have in their turn become the victims; for protection does, in fact, destroy the very market which it intends to monopolize. It has introduced great distress among six millions of inhabitants of the wine districts, who would naturally be large consumers of home produce. In France the agricultural is by far the most numerous class; and if the sale of their produce is prevented by the exclusion of what other countries have to offer in payment, the means of ultimately dealing with the manufacturer are destroyed. To whatever article inquiry is directed, the results will be found analogous."

The cotton manufacture in France labours under a considerable natural disadvantage as compared with that branch of industry in England, arising from the comparative high price of fuel. Another circumstance equally unfavourable to the French manufacturer is the high price of iron, and consequently of machinery. The first of these evils is aggravated by the imposition of a heavy duty on the introduction of coals into that country, for the protection of the owners of forests; and the dearness of iron is chiefly occasioned by a similar fiscal absurdity, for the advantage, first, of the owners of forests the value of whose property would suffer if encouragement were withdrawn from the iron-masters, who are their customers to a great extent; and, secondly, for the supposed benefit of those iron-masters, who would be unable to carry on their works in the face of foreign importation.

In spite of these unfavourable circumstances, however, the cotton manufacture has greatly increased of late years in France. The quantity of raw cotton imported into that country in 1812, the earliest year o the present century as to which we have any statement was 6,343,230 kilogrammes—about 14,000,000 pounds In 1815 the importation amounted to 36,000,000 pounds but for some years thereafter the increase did not continue at the same rate of progression, so that in 1823 the quantity consumed was somewhat under 45,000,000 pounds. In the following year the importation was 61,000,000, and in 1833 had reached 78,000,000, being about one-fourth part the quantity used during that year in this country.

These quantities do not afford a correct view of the French cotton manufacture, because a considerable quantity of cotton twist of fine qualities has every year been systematically smuggled into the country. The government connived at this illegal traffic, because the French spinners being unable to produce twist of a quality fit for the manufacture of muslins and fine cloths, the very existence of their largest cotton manufactories would have been endangered or destroyed by the exclusion of the material which they employ. The extent to which this illicit trade was carried is thus stated in the report of Messrs. Villiers and Bowring, on the commercial relations between Great Britain and France (page 48).—" Of English manufactures, cotton-twist is among those whose fraudulent introduction is the most extensive and irrepressible. It makes its way both by land and sea in spite of all interdictions, to a continually increasing amount. The qualities principally in demand are the higher numbers, which the French mills cannot produce, or produce only at an extravagant price. An official return states that the French number 180, which can be bought in England at 18 fr. per kilogramme, sells in France at 39 fr. to 40 fr. The same quality of French manufacture, to which no risk of seizure attaches, will, it is said, produce 42 fr., the two or three francs of difference being paid for the additional security. The numbers principally introduced are from 170 to 200, and are employed chiefly for the fabrication of bobbin-net (tulle). But there is also a large demand for English cotton chains at Tarare, and they are so necessary for the existence of that manufacture, that, by the connivance of the Custom-house authorities, no seizures take place after the article is lodged in the warehouse of the manufacturer. He has then to support an additional cost of from 30 to 40 per cent., the whole of which (by the connivance of the government) goes to the contraband traders. The amount of illicit introduction is calculated at above twelve millions of pounds."

Since the time when this report was written some relaxation has been made in the French tariff, and by a royal ordonnance bearing date 8th July, 1834, the importation of cotton yarns above a certain degree of fineness is permitted on payment of a duty equal to about half-a-crown per pound, which is equivalent to 30 per cent. upon the value of those qualities which are mostly imported into France. At this rate of duty some fine English yarns are regularly introduced, but the charge of the smuggler being below that of the Custom-house, a much larger quantity is still illicitly imported, and it does not appear that the spinning-trade in this country will be much if at all affected by this substitution of a high duty for the former prohibition.

The following table of the quantity and value of cotton imported into France, and of cotton manufactures exported from that country, from 1787 to 1789, and from 1812 to 1833, is taken from the "Enquête Relative à Diverses Prohibitions," recently published from authority.

Years.	Cotton imported.		Cotton Manufactured Goods and Yarn exported.	
	Weight.	Value.	Weight.	Value.
	Kilogrammes.	Francs.	Kilogrammes.	Francs.
1787	4,466,000	42,903,100	. . .	21,227,200
1788	5,439,424	36,637,600	. . .	21,455,400
1789	4,760,221	33,274,000	. . .	21,289,000
1812	6,343,230	35,115,683	792,789	18,507,938
1813	9,638,842	54,556,716	837,663	8,532,058
1814	8,181,710	32,737,609	331,995	10,187,844
1815	16,414,606	32,829,212	314,969	8,698,840
1816	12,115,042	19,849,228	1,020,132	22,002,698
1817	13,370,398	25,521,051	841,370	18,419,106
1818	16,974,159	30,945,259	784,766	16,748,361
1819	17,010,401	32,232,948	937,756	19,606,547
1820	20,203,314	36,825,157	1,369,160	29,120,058
1821	22,586,615	41,366,675	1,709,028	21,534,061
1822	21,572,413	39,696,083	1,107,075	21,284,678
1823	20,353,552	37,006,940	1,292,515	28,812,455
1824	28,030,085	49,187,624	1,751,975	31,829,074
1825	24,667,312	44,061,717	1,847,417	43,190,495
1826	31,914,494	56,353,941	1,629,766	37,646,785
1827	29,684,385	51,918,941	1,987,678	46,522,211
1828	27,375,163	49,143,991	1,977,162	45,729,737
1829	31,839,601	57,139,657	2,251,265	52,790,840
1830	29,260,433	51,760,582	2,339,065	55,636,150
1831	28,229,487	49,441,816	2,360,944	55,615,059
1832	33,636,417	58,442,869	2,353,474	55,128,426
1833	35,609,819	62,289,758	2,438,742	57,007,133

The countries to which France exported woollen and cotton goods in 1833, with the value of those exported, are shown in the following table, which is likewise taken from the "Enquête."

Countries.	Value of Exports.	
	Woollens.	Cottons.
	Francs.	Francs.
England	1,650,105	513,296
Holland	242,623	585,634
Belgium	2,062,043	6,763,941
Sweden and Norway . .	68,993	
Russia	171,143	
Austria	128,396	
Prussia	104,095	253,897
Germany	1,389,634	2,667,009
Switzerland	3,093,008	2,440,357
Sardinian States . . .	4,093,149	5,467,417
Tuscany and Roman States .	505,868	519,580
Naples and Sicily . . .	620,871	1,186,493
Spain	5,329,175	14,340,647
Turkey and Greece . .	4,818,906	398,093
Egypt	1,017,094	
Barbary States . . .	1,115,399	218,491
Algiers and Coast of Africa .	683,149	582,539
United States of America .	6,207,054	5,739,955
Hayti	149,891	1,830,089
Foreign West Indies . .	84,227	1,135,651
Mexico	278,601	1,690,844
Columbia	23,826	45,325
Buenos Ayres	168,887	236,983
Chili	280,999	262,519
Peru	970,665	74,387
Brazil	377,957	1,212,117
Foreign India	46,081	185,306
French Colonies . . .	771,302	7,116,745
Other countries . . .	210,210	892,000
Fr.	36,663,351	56,359,315
Or sterling £	1,466,534	2,254,372

The silk manufacture has long been carried on in France, to an extent which has caused it to be considered one of the most important branches of the national industry. The raw material being principally produced in the country, there are not any means of ascertaining precisely the quantity that is employed in its looms. At the breaking out of the French revolution the estimated quantity of native silk produced was one million of pounds. The tables published by Count Chaptal of the production of different departments in the five years from 1808 to 1812 give an annual average of about 950,000 pounds. There had consequently been no increase during twenty years—the whole of which period had been passed in a state of war. Between 1812 and 1820 we have no estimate of the progress of production: in the latter year the quantity is said to have amounted to 1,350,000 pounds, but there are reasons for believing that this estimate is somewhat below the truth. The facts collected by Dr. Bowring in his recent official inquiry show that the present annual produce of France is about 3,000,000 pounds. The average annual weight of foreign silk imported into France, after deducting the quantity re-exported, is about 1,000,000 pounds. There are not any tables of the quantities imported at earlier periods, but reasons are given for believing that the relative proportions of native and of foreign silk have been pretty steadily preserved, and that importation has kept pace with the increase in quantity of the native material.

According to this calculation the annual weight of silk consumed in France is about 4,000,000 pounds—a quantity greatly below that which is employed in the silk-looms of this country. It is generally estimated that the total value of the silk manufactures of France is at present 140,000,000 of francs, or about 5,600,000*l.*, four-sevenths of which consist of the value of the material used, the remaining three-sevenths of value being added for labour and profit. The result of the manufacture in both countries is placed in very striking contrast by the fact, that while five-sixths of the silk goods made in France are exported—leaving, consequently, for the use of her 32,000,000 of inhabitants, silk fabrics below the value of 1,000,000*l.* sterling—the export of English-made silk goods does not amount to one-tenth of the quantity that passes through our looms, and is more than replaced by the goods of foreign manufacture imported for use; so that taking into the calculation the difference in the number of the people, and the greater cost of production, the consumption of silk goods is more than eleven times as great in the United Kingdom as it is in France.

In 1834 we imported 183,813 pounds weight of silk goods manufactured in Europe, more than nineteen-twentieths of which were brought from France; but this does not comprise the whole of our purchases of foreign silks, a considerable quantity being introduced illicitly. It is well known that with regard to blonde lace, the value of which is great in proportion to its weight and bulk, not more than one-tenth part of the quantity introduced into England is passed through the Custom-house. It is, of course, not possible to enter minutely into any statements concerning the amount of a trade carried on through a system of concealment, but by contrasting the returns of the French and English Custom-houses, we cannot avoid the conviction that it is very great, and probably quite as considerable as it was during the period of prohibition—that is, previous to 1826.

" It appears," says Dr. Bowring, in his second report on the commercial relations between France and England, " that before the legal introduction of French manufactured goods into England, the exports from France had gone on progressively from an amount of 1,744,105 fr. in 1818, to 6,104,103 fr. in 1825. The difference in the cost of production at that time was hardly less than 40 per cent.; so that the amount of smuggling did not represent a less sum than 340,000*l.* per annum."

"According to the estimates of the French and English Custom-houses, it would appear that the difference of weight between the manufactured silks exported from France, and those regularly imported into England, from 1825 to 1831, averaged 134,400 pounds; and that from 1829 to 1831, the average was equal to about 140,000 pounds weight." The quantity exported in 1825 (of course by illicit traders), if estimated according to the rate used at the French Custom-house, was 50,867 kilogrammes, or 111,907 pounds English weight.

These facts seem strongly to warrant the opinion that the scale of duties charged on the admission of foreign-made silk goods into this kingdom is fixed too high.

A considerable revolution in the practice of the producers of silk has been introduced of late years into the southern provinces of France. A very interesting paper upon this subject was furnished to Dr. Bowring by Messrs. *Thomas, Freres*, of Avignon, and is inserted in his second report on the commercial relations between France and Great Britain. The following extract from that paper will serve to account for the great increase experienced in the production of silk, when compared with the early part of the century:—

"The cultivation of mulberry-trees was for a long period only an accessory branch of the income derived from their estates by the little as well as by the larger proprietors; their cultivation, as compared with that of grain, forage, and other articles peculiar to certain districts, such as saffron and madder in this country (Vaucluse), oil and tobacco in Provence, &c., was the less thought of, because the rearer of silkworms, notwithstanding the great importance of the article, considered as a whole, in the south of France, was so much under the influence of long-standing practice, prejudices, and ancient absurdities, that the management of their business was unintelligible, and its production most uncertain: whereas had they proceeded, as they at length did, on sound principles, guided by the simplest elements of chemistry, they would have rendered these harvests more certain than those of any other crop. These rearers of silk-worms differed materially in their method of proceeding: sometimes the farmers sold the mulberry leaves, or gave them in consideration of a participation in the profits, to some rearer of silk-worms, who devoted his particular attention to the worm alone: sometimes the leaves were sold to other rearers, who, from the excessive numbers they hatched, were not able sufficiently to provide them with leaves. Within so late a period as twenty years back, so imperfect were the methods pursued, that on a farm furnishing leaves for ten or twelve ounces of silk-worms' eggs, which should produce from 80 to 100 pounds of cocoons per ounce, it was considered a good crop if five or six pounds altogether were produced. It was not until towards the close of the reign of Napoleon, when the active spirit of the nation sought other fields for exertion than the field of battle, that, guided by the studies and examples of some enlightened agriculturists—and amongst others those of Dandolo—and stimulated by the high prices to which silk had been advanced, our people of the south devoted themselves, with that ardour which marks their character, to the cultivation of the mulberry-tree, and to the rearing of the silk-worm. Many of the large proprietors united their efforts to those of a multitude of little planters of the mulberry-tree and rearers of the silk-worm, and it was then that establishments were formed which by their importance, and the certainty and value of their results, would have excited astonishment at the commencement of that age."

The raw silk of France is of very excellent quality. This arises principally from the nature of the soil, which is favourable to the promotion of that degree of vigour in their vegetation, which gives to mulberry leaves a quality that imparts to the silk produced a great degree of fineness, joined to a brilliant colour. The dealers have besides adopted a system which proves an effectual security against fraud in the sale of silk. When reeled, it is sent to an establishment called the *condition*, in which, by exposure to a high temperature, all superfluous moisture is evaporated, and the true weight ascertained. It is upon certificates of this weight, signed by the officers of the establishment, that sales are effected. A very careful investigation of this subject carried on at Lyons, leads to the belief that, by this means, the purity of the material is tested with very great accuracy. Until a very recent period, the exportation of native raw silk was forbidden by the French government, under the belief that their manufacturers were thereby secured in the possession of an advantage over their rivals in other countries. This circumstance formed a subject of complaint on the part of our silk-weavers, who were thus placed at a disadvantage in competing with goods made of a better material than they were able to procure. This cause of complaint has now been removed. Yielding to the representations made by the Commercial Commissioners of this country, the French government has legalised the exportation of native silk, both raw and thrown, at a moderate rate of duty; a concession which, by promoting production, will prove of advantage to the agricultural interest in the south of France, without inflicting any real injury on the manufacturers of that country.

A considerable impulse has been given to manufacturing industry in different parts of Germany within the last twelve years, and especially since the formation of the Prussian commercial league. In Prussia itself, many cotton spinning mills have been erected since 1833, and large capitals have been invested in machinery. In Saxony, the manufacture of hosiery has become considerable in amount, and the goods produced are so low in price that exports have been made to England in the face of a consumption duty of 10 per cent. on the value. The cotton manufacture has also been successfully undertaken in Bavaria, in Wirtemberg, and in some others of the states included within the league. These attempts, however, are for the most part of such recent origin, that it is hardly possible to form any certain estimate as to their ultimate results. At present it is only through the imposition of a considerable import duty in the German States, that their cotton goods are able in any way to compete with English fabrics; but it is altogether impossible to say how long this state of things may continue, and it may reasonably be expected, that the German artisans will in time acquire a degree of skill and experience, which, aided by the lower cost of subsistence in Germany, as compared with England, will render their rivalry formidable to Manchester and Paisley, at least in the neighbouring countries, if not in more distant parts of the world.

It has long been the policy of the Russian government to afford protection to its own manufacturers by prohibiting the goods of other countries. At present nearly the whole amount of the exports from this kingdom to Russia consists of cotton yarn, which is there woven into all kinds of fabrics, from the coarsest fustians to fine cambrics. The establishments for this purpose are under the immediate patronage of the Russian government, and it is said that the goods produced are so good in quality as to equal those of English make; but in regard to the cost of production, the advantage is still greatly with us, and so it will probably remain so long as Russia shall maintain the policy of protecting its artisans from the competition of other countries.

In several of the Cantons of Switzerland the manufacture of woven fabrics has been steadily and prosperously pursued of late years. So little of what is called protection is accorded to the Swiss manufacturer, that there are not any Custom Houses in the Cantons from which to obtain returns of imports and exports, whereby to ascertain the comparative progress of these branches of industry. Free trade, in the fullest extent of the term, has been tried in these Cantons, and although, as already observed, we are unable to bring forward an array of figures in proof of its success, we know that in spite of the disadvantages of geographical position, and notwithstanding the comparative scarcity of capital, the cotton, which is obtained by a tedious and expensive land carriage, is converted into fabrics which compete successfully in every market with the products of our looms; and that the silk and linen goods of Switzerland, which are excluded by fiscal regulations from neighbouring countries, find customers in a wider and more profitable field on the other side of the Atlantic. If we take into account the small natural resources of the Swiss manufacturers, it may with truth be asserted that no people have made greater, or even as great, progress as they have done during the last twenty years. Switzerland has lately been strongly urged to join the Prussian commercial league, and by that means to secure twenty-four millions of consumers for its cheap manufactures; but satisfied with their present condition and future prospects, and jealous as to the possible effect of permitting foreigners to interfere in any way with their concerns, the Cantons have, for the present, declined to accept the proffered advantage.

CHAPTER IV.

MANUFACTURES.

CONTENTS.

IRON—STEEL—BRASS—COPPER—PLATED WARES—GLASS—HARDWARES.

Increase of population of Birmingham—Fall in cost of goods—Quantities exported, and value of the same—British iron exported—Quantity and value of brass and copper goods exported—System of manufactures pursued at Birmingham—Increase of population of Sheffield—Conversion of iron into steel—Quantity of steel exported—Value of plated goods exported—Glass manufacture—Causes which have prevented its extension—Quantity retained for consumption—Effect of high duties in limiting consumption—Illicit manufacture.

THERE are many branches of manufacturing industry in this country which are of considerable importance from the number of hands to whom they give employment, but as to the amount or progress of which it is not possible to form any other than a conjectural or at best an approximative opinion.

Among the manufactures thus circumstanced may be mentioned those of hardware, plated goods, and earthenware. The materials of which these articles are made are for the most part produced at home; and as the goods manufactured have never been subjected to duty, no means exist whereby to judge of the increase or otherwise of their quantity. It was at one time thought practicable to estimate the progress of the manufacture carried on in the potteries of Staffordshire, by ascertaining the quantity of raw material conveyed into the district on the canals; but the attempts which have been made to procure a statement of the tonnage so conveyed have not hitherto met with any success, owing probably to a misconception on the part of the managers of the canals as to the motive which has prompted the inquiry. In proportion as the value of such information to the community becomes better known, we may hope that the avenues to it will be less jealously guarded, and that a general willingness to communicate information will ere long take the place of that feeling which seeks advantage from concealment.

With regard to the manufacture of hardwares, we can have no doubt as to its extension if we compare the population of Birmingham as given at each census.

In 1801 it consisted of 73,670 souls
1811 . . 85,755
1821 . . 106,722
1831 . . 146,986

So that the number has doubled in thirty years. It will be observed that the increase which has occurred during the last ten years, from 1821 to 1831, amounts to upwards of 54 per cent. upon the population as it existed at the beginning of the century.

The increase of buildings in the town of Birmingham during the ten years between 1821 and 1831, amounted to 38 per cent., and the greater number that were being built in 1831, as compared with 1821, shows that the increase was still progressive.

	Inhabited.	Houses Building.	Uninhabited.	Total.
1821	21,487	148	1,461	23,096
1831	29,656	551	2,111	32,318

The extension of the manufacture of which this growth of population exhibits indubitable proof, has been accompanied—or, perhaps, to speak more correctly, has been occasioned—by improvements in the methods of production, which have lowered the prices of goods in a manner calculated to insure a continuance of prosperity to those engaged in the manufacture, by extending the number of consumers. This fact is shown by Mr. Babbage, who has given the following table " extracted from the books of a highly respectable house at Birmingham."

Description.		1812.		1832.		Reduction per cent. in price of 1812.
		s.	d.	s.	d.	
Anvils	cwt.	25	0	14	0	44
Awls, Liverpool blades .	gross	3	6	1	0	71
Candlesticks, iron, plain .		3	10¾	2	3½	41
,, screwed .		6	4½	3	9	41
Bed Screws, 6 inch, square head,	gross	7	6	4	6	40
,, flat head	,,	8	6	4	8	45
Curry Combs, 6 barred . .	dozen	4	0½	1	0	75
,, 8 barred . .	,,	5	5½	1	5	74
,, patent, 6 barred	,,	7	1½	1	5	80
,, ,, 8 barred	,,	8	6¾	1	10	79
Fire Iron, iron head, No. 1. .		1	4½	0	7¾	53
,, ,, No. 2. .		1	6	0	8½	53
,, ,, No. 3. .		1	8¼	0	9½	53
,, ,, No. 4. .		1	10½	0	10½	53
Gun Locks, single roller .	each	7	2½	1	11	73
Locks, 1½ brass, port, pad .	,,	16	0	2	6	85
,, 2½ inch, 3 keyed till locks	,,	2	2	0	9	65
Shoe Tacks . . .	gross	5	0	2	0	60
Spoons, turned, iron table .	,,	22	6	7	0	69
Stirrups, com., tinned, 2 bar .	dozen	7	0	2	9	61
Trace Chains, iron . .	cwt.	46	9½	15	0	68

The interval that has occurred between the dates here contrasted has been twenty years, and it will be seen that during that time, in a pretty extensive list of articles, the reduction in price on some has been 40 per cent., while on others it has gone to the almost incredible extent of 80 to 85 per cent. The cost of the material employed has, it is true, fallen very considerably in the interval, but this can have had but little influence in reducing prices, when, as is the case with nearly all the articles comprised in the list, the first cost of the material forms only a minute portion of the value of the finished article.

The degree in which this reduction in their cost has occasioned an increase in the number of foreign customers, may be gathered from the amount of hardware and cutlery exported at different periods during the present century:—viz.

1805	4,288	tons
1806	4,629	,,
1807	4,669	,,
1808	2,673	,,
1809 to 1811	Records destroyed	
1812	5,854	,,
1813	Records destroyed	
1814	6,162	,,
1815	15,472	,,
1816	13,914	,,
1817	8,190	,,
1818	11,057	,,
1819	8,699	,,
1820	6,697	tons
1821	9,037	,,
1822	10,466	,,
1823	10,375	,,
1824	12,285	,,
1825	10,980	,,
1826	9,627	,,
1827	12,443	,,
1828	12,100	,,
1829	13,028	,,
1830	13,269	,,
1831	16,799	,,
1832	15,294	,,
1833	16,497	,,
1834	16,275	,,

The value of these exports since 1820, as declared by the merchants at the time of shipment, was:—

1820	£ 949,085
1821	1,237,692
1822	1,334,895
1823	1,264,441
1824	1,454,296
1825	1,391,112
1826	1,169,105
1827	1,392,870
1828	£1,385,617
1829	1,389,515
1830	1,410,936
1831	1,620,631
1832	1,433,297
1833	1,466,361
1834	1,485,233
1835	1,833,042

A much more striking progress has been made in the exportation of British iron in an unmanufactured state. The quantities supplied to other countries by Great Britain in each year of the present century have been:—

	Bar Iron.	Pig Iron.	Castings.
	Tons.	Tons.	Tons.
1801	3,001	1,583	
1802	5,459	1,815	
1803	3,574	1,532	
1804	6,064	2,237	
1805	6,594	3,276	
1806	4,194	2,549	1,694
1807	5,172	2,925	1,593
1808	9,096	3,388	1,797
1809 to 1811	Records	destroyed.	.. .. ..
1812	13,196	4,066	2,349
1813	Records	destroyed.	..
1814	15,468	307	5,034
1815	18,223	166	5,320
1816	20,870	953	6,388
1817	34,310	4,057	6,322
1818	42,095	3,048	6,303
1819	23,765	906	7,270
1820	36,848	2,746	5,186
1821	34,093	4,484	4,506
1822	33,395	5,095	4,810
1823	33,138	7,545	5,730
1824	25,781	2,093	6,717
1825	25,613	2,815	5,944
1826	33,253	6,563	5,940
1827	45,284	7,095	6,292
1828	51,108	7,826	6,205
1829	56,178	8,931	8,219
1830	59,885	12,036	8,854
1831	64,012	12,444	10,361
1832	74,024	17,566	12,495
1833	75,333	22,988	14,763
1834	70,809	21,788	13,870

The quantity and value of brass and copper manufactures exported in each year from 1805, the earliest year of which we have any record, are as under. It is only in this branch that any estimate can be formed of the progress of these manufactures, but there is no reason to doubt that the home demand has at least kept pace with that from foreign countries. The value previous to 1814 is given according to the official rates, but on and after that year the real or declared value is stated.

1805	Cwts. 85,054	£382,740	official value
1806	,, 71,154	320,198	,,
1807	,, 91,422	411,399	,,
1808	,, 79,210	356,442	,,
1809	,, 89,752	403,888	,,
1810	,, 79,584	358,132	,,
1811	,, 64,210	288,945	,,
1812	,, 87,508	393,784	,,
1813	,, Records destroyed.		

1814	Cwts. 73,248	£479,518	real value
1815	,, 124,426	753,604	,,
1816	,, 128,044	675,004	,,
1817	,, 161,128	795,843	,,
1818	,, 148,490	811,191	,,
1819	,, 115,998	669,403	,,
1820	,, 145,124	738,486	,,
1821	,, 149,444	678,976	,,
1822	,, 135,956	597,861	,,
1823	,, 123,982	543,618	,,
1824	,, 120,048	523,489	,,
1825	,, 90,054	485,118	,,
1826	,, 116,584	571,149	,,
1827	,, 147,222	786,955	,,
1828	,, 128,106	678,786	,,
1829	,, 163,241	812,366	,,
1830	,, 189,592	867,344	,,
1831	,, 181,951	803,124	,,
1832	,, 213,482	916,563	,,
1833	,, 192,974	884,149	,,
1834	,, 205,960	961,823	,,

The largest shipments of these manufactures are made to India; the markets of Hindustan, in 1834, took from us 75,605 cwt., valued at 345,561*l*., a quantity greater than the amount of the shipments to all parts of the world in 1814. France is our next most considerable customer, having, in 1834, taken 56,468 cwt., valued at 249,716*l.*; to the whole of our colonies and dependencies, exclusive of India, we sent only 12,759 cwt., valued at 67,063*l.* The United States took 17,256 cwt., valued at 87,840*l.*; leaving 43,872 cwt., valued at 211,643*l.* for the supply of the rest of the world.

The greater part of the articles most commonly manufactured at Birmingham are not produced in extensive factories, in which large capitals must be employed for the erection of machinery. Almost all the small wares of the district are made by workmen who undertake, each one in his particular line, to execute orders received by the merchants and agents settled in the town. The profitable performance of their contracts, however, calls for the employment of a cheaper kind of power than is at the command of men who, like these workmen, have little or no capital; and this course of business has opened a channel for the employment of money in the town, in a manner which is found to be profitable to those who engage in it, and advantageous to the small manufacturer. The plan alluded to is this. A building, containing a great number of rooms of various sizes, is furnished with a steam-engine, working shafts from which are placed in each apartment or workshop, which is likewise furnished with a lathe, benches, and such other conveniences as are suited to various of the branches of manufacture for which the rooms are likely to be needed. When a workman has received an order for the supply of such a quantity of goods as will occupy him a week, or a month, or any other given time for their completion, he hires one or more of these rooms, of sizes and with conveniences suited to his particular wants, stipulating for the use of a certain amount of steam-power. He thus realizes all the advantage that would accompany the possession of a steam-engine;

and as the buildings thus fitted up are numerous, competition on the part of their owners has brought down the charge for the accommodation they offer to the lowest rate that will ensure to them the ordinary rate of profit on the capital employed.

Before the introduction of this system, the trade of Birmingham was for the most part carried on by men of large capital, who employed journeymen, and gave a considerable credit to the merchants who dealt with them. At present, those merchants themselves employ the workmen, who can give no credit, but receive payment in ready money at the end of every week for such part of their goods as they can then deliver in a finished state.

In this way the profit of the intermediate dealer is saved, and this circumstance will, in part, account for the great diminution that has occurred in the prices of the different articles contained in the table already given.

The prosperous state of the manufacture of cutlery may be fairly inferred from the increase in the population of Sheffield, from which town proceeds nearly all the cutlery which is made in this kingdom, including a great part of the " London made" knives and razors, stamped with the names of metropolitan cutlers, who avail themselves of a prejudice on the part of the public, to charge an exorbitant profit on their " town-made goods."

The population of Sheffield at each of the four decennary periods, ending with 1831, was as follows:—

Years.	Population.	Increase per Cent.
1801	45,755	
1811	53,231	16
1821	65,275	23
1831	91,692	40

The exemption of the inhabitants from any serious degree of distress may be inferred from the following table, which exhibits the amount of poor's rates, and the number of paupers in the poor-house in each year, from 1818 to 1832.

Years.	Total Expenditure of the Overseers of the Poor in the Years ending in March.	Number in the Poor-House in January of each Year.
	£.	
1818	31,189	256
1819	22,628	236
1820	37,467	313
1821	86,182	298
1822	20,141	284
1823	15,663	173
1824	16,787	210
1825	14,130	236
1826	12,967	230
1827	14,248	325
1828	15,926	254
1829	20,592	333
1830	18,691	329
1831	17,086	334
1832	17,342	328

The excess in the expenditure of 1821, so much beyond that of any other year in the list, was occasioned by the erection of a new poor-house. The average rate of the three years, from 1818 to 1820, was 30,428*l*., which, calculated upon the population of 1821, was equal to 9*s*. 4*d*. per head; and this, although it was below the average for the whole of England, which in that year was 10*s*. 11*d*., was higher than the average for the West Riding of Yorkshire, which was no more than 6*s*. 9*d*. for each inhabitant. In 1831, the rates generally were lower than they had been in 1821. For the whole of England, they were 9*s*. 11*d*., for the West

Riding of Yorkshire, 5*s*. 7*d*.; but in Sheffield, calculated upon the increased population, the average per head was only 3*s*. 9*d*., at about which level the assessment appears to have been kept for several preceding years.

The comparative situation and apparent prospects of the town at the two enumerations of 1821 and 1831, may be inferred from the returns made under the Population Acts:—viz.

	Houses Inhabited.	Houses Building.	Houses Uninhabited.	Total.
1821	13,381	80	1,664	15,125
1831	18,331	468	914	19,713

The increase in the actual number of houses, between the two periods, is 4200, or about 28 per cent.; the proportion of uninhabited houses, in 1821, was nearly 1 in 9, and the proportion building, only 1 in 189; while in 1831, the proportion of uninhabited houses was only 1 in 21, and of those building, 1 in 41.

One branch of manufacture carried on in Sheffield has been very greatly extended during the last few years, until it has now become of considerable importance: this is the conversion of iron into steel, a process which is performed to the extent annually of nine thousand tons, between one-fifth and one-sixth part of which is exported in an unwrought form. The town of Sheffield, at this time, (1835,) contains fifty-six furnaces for converting iron into steel; beside which, there are sixty-two establishments, containing 554 furnaces, for *moulting* steel. The original conversion of the metal into blistered steel occasions the use of about 12,000 tons of coal in the form of coke, and the subsequent processes require about 81,000 tons in addition. The various manufactures of cutlery and plated goods carried on in the town consume about 200,000 tons, and 38,000 tons are the estimated allowance for the working of steam-engines, of which there are seventy-four, of the aggregate power of 1353 horses. If to these quantities are added 184,000 tons, as fuel for household purposes, it will appear that the entire consumption of coal, in Sheffield, amounts annually to 515,000 tons, the whole of which is taken from collieries in the immediate vicinity of the town. Five-sixths of the iron used for manufacturing purposes in Sheffield is of foreign production; only 2000 out of 12,000 tons consumed in the year are of British origin. The cost of the fuel forms just one-third part of the expense of converting and casting steel.

The progress of this particular branch of trade may be understood from the following statement of the quantity of unwrought steel exported in each year, from 1814 to 1834.

1814	323 tons
1815	1,221 ,,
1816	917 ,,
1817	475 ,,
1818	704 ,,
1819	494 ,,
1820	326 ,,
1821	515 ,,
1822	564 ,,
1823	479 ,,
1824	570 ,,
1825	533 tons
1826	472 ,,
1827	535 ,,
1828	917 ,,
1829	714 ,,
1830	832 ,,
1831	1,207 ,,
1832	1,112 ,,
1833	1,587 ,,
1834	1,709 ,,

Our principal market for unwrought steel is found in the United States of America. The quantities sent there in each of the twenty years from 1815 to 1834, were as follows:—

1815	774 tons
1816	497 ,,
1817	249 ,,
1818	224 ,,
1819	124 ,,
1820	85 ,,
1821	274 ,,
1822	288 ,,
1823	233 ,,
1824	173 ,,
1825	130 tons
1826	137 ,,
1827	227 ,,
1828	518 ,,
1829	330 ,,
1830	397 ,,
1831	852 ,,
1832	686 ,,
1833	970 ,,
1834	1,099 ,,

It will be observed, that the first few years of the series present larger quantities than were afterwards required. This circumstance is accounted for by the fact, that no shipments took place from this country to America in the years immediately preceding, during which time, we were at war with the United States. The exportation of 1815, the first year of renewed intercourse, has, however, been greatly exceeded of late, giving the appearance of a steady as well as rapid extension of the trade.

The manufacture of plated goods, which is carried on in Sheffield and Birmingham, is one of those branches of industry, the progress of which we have no means of ascertaining. The quantity exported forms no indication, and in fact, there is not in foreign countries any reason equally cogent with that existing in England for the use of plated goods; for so far at least as we know, there is not any other country in which a duty is levied upon articles of use and luxury which are made of gold and silver. The imposition of this duty has no doubt given encouragement to the production of plated wares for home use, but not for exportation, since the duty paid upon articles fashioned entirely with the more precious material is repaid to the exporter.

The declared value of plated goods exported in the years 1831, 1832, and 1833, was no more than 22,295*l.*, 20,727*l.*, and 24,209*l.*, respectively; about two-thirds of these amounts were sent to different colonies and dependencies of the British empire, and principally to India.

Our makers of plated wares have an advantage over all others, from the perfection of the machinery used in this country for rolling metals. The difference thus caused, if estimated in money, is in favour of English manufacturers, as compared with those in France, in the proportion of seventeen to thirteen in the cost of the material employed. It has been estimated, that the value of articles of this manufacture used in the United Kingdom, amounts to 1,200,000*l*. per annum; while in France, the consumption does not exceed in value 40,000*l*. sterling per annum, an equal value being also exported from that country, principally to Holland, Belgium, Spain, the Sardinian States, Germany, the United States of America, and Mexico.

The declared value of British-made plate, plated ware, jewellery, and watches, exported from the United Kingdom, the whole of those articles being included together in the custom-house returns, was as follows during the nine years from 1827 to 1835.

1827	£169,456	1832	£173,593
1828	181,973	1833	179,283
1829	177,830	1834	192,269
1830	190,515	1835	231,903
1831	188,144		

Of the shipments made in 1834, amounting to 192,269*l*., the East Indies took to the value of 30,563*l*.; the West India Colonies, 14,954*l*.; other British possessions, 24,892*l*.; the United States of America, 67,797*l*.; and Italy, 14,756*l*.; leaving only 39,307*l*. for the value of shipments to all other parts of the world.

Our glass manufacture is placed under circumstances which, while they enable us to ascertain the importance of the art as a branch of national industry, have in a great degree prevented its extension.

The only reasons that can be shown, why the demand for an article so generally useful and desirable as glass should not have kept pace with the growth of our population, and with the increase of our means of commanding the conveniences of life, are these—that it has been loaded with excessive duties, and that the processes of the manufacture have been so interfered with by the regulations necessary for the collection of those duties, as to prevent the introduction of many improvements. A further cause may perhaps be found in the fact, that in order to work profitably under those regulations, it has been necessary to carry on the manufacture upon so large a scale, as to create a virtual monopoly, of some of its branches at least, in the hands of a few,—a state of things generally unfriendly to improvement.

England possesses within herself nearly all the materials of which glass is composed, and can procure the rest from abroad at as cheap a rate as any other manufacturing country. The fuel necessary for the process, and which forms a large part of the cost of the manufacture, we have on better terms than any other country; and yet, although the whole of the duty charged is drawn back on exportation, there are not any countries in which glass is made where its price allows our manufacture to be brought into competition with their own.

The effect of enhancement of price upon the home consumption of any article, not of absolute necessity, is made sufficiently striking by the fact, that in 1801, with a population of sixteen millions, the quantity of glass used was 325,529 cwts.; and in 1833, with a population of twenty-five millions, the quantity was no more than 363,463 cwts.; an increase of less than one-eighth, while the population had increased in the proportion of one-half. That some economical improvements have been introduced into the processes of glass-making, notwithstanding the obstacles presented by excise-regulation, is rendered apparent by the fact, that the prices have fallen very considerably within the last few years; while the quantity used has been (although in only a small degree) increasing. The fall in price has been proceeding gradually, from year to year, just in such a manner as would accompany the employment of more economical modes of working. Since 1827, the reduction, taking one article with another, in a long list furnished by a respectable manufacturer, has been 25 per cent. upon the price of those articles which are of common use.

The quality of English glass is considered good. As regards the most costly branch of the manufacture, plate glass, our manufacturers have, within the last ten years, successfully rivalled the French makers; so that English plate glass is now even preferred to French. There yet remains much to be done, however, towards perfecting this beautiful manufacture; and this it would be vain to hope will be accomplished, so long as our manufacturers are fettered by regulations which in a great measure prevent attempts at improvement.

The quantities of glass made and retained for consumption in Great Britain in each year from 1789 to 1834 are shown in the following table, from which it will be seen that notwithstanding the augmentation of the population, which during the forty-six years embraced by the table has amounted to more than sixty per cent., there has been no increase whatever, but the contrary, in the consumption of British glass. If the first and last years of the series are compared, it will indeed appear that there is an increase of rather less than 15 per cent.; but by taking an average of the three years from 1789 to 1791, and from 1832 to 1834, it will be seen that the annual consumption in the former period was 362,691 cwts., and in the latter period 350,271 cwts., exhibiting an actual falling-off to the extent of about 3½ per cent.

Years.	QUANTITIES of GLASS retained for Home Consumption.							Net Revenue of Customs and Excise.		
	Flint and Plate.		Broad.	Crown, or German Sheet.	Common Bottle Glass.	Plate, &c., imported.				
	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Feet.	£	s.	d.
1789	48,245	....	24,194	81,403	185,296	1,114	13,502	159,448	4	0
1790	44,527	....	21,302	81,285	215,034	1,270	11,375	160,057	11	1
1791	45,990	....	21,924	76,185	242,684	1,871	15,095	163,911	15	0
1792	51,410	....	22,214	75,610	238,127	1,858	28,004	167,866	10	6
1793	55,267	....	21,519	80,225	250,192	1,642	20,736	177,407	19	8
1794	67,615	....	20,607	83,940	227,476	2,593	223	178,958	6	0
1795	49,218	....	21,694	47,881	205,330	3,327	2,010	183,749	8	0
1796	49,166	....	26,254	53,538	165,065	2,081	10,076	176,944	8	5
1797	48,463	....	25,971	58,235	147,865	1,640	4,598	174,092	2	2
1798	49,938	....	20,621	50,790	105,096	1,313	409	156,380	6	2
1799	55,987	....	19,690	41,571	132,475	1,867	51	164,659	16	9
1800	61,748	....	19,874	55,821	159,334	2,235	1,958	188,240	3	3
1801	57,663	....	19,381	61,389	187,096	2,775	752	195,414	5	7
1802	59,483	....	20,948	67,401	199,939	2,850	267	209,740	18	2
1803	69,764	....	16,626	81,501	239,297	2,402	3,454	241,856	10	4
1804	62,656	....	12,741	68,678	223,174	1,927	567	219,979	11	8
1805	64,311	....	16,701	97,096	215,094	2,556	....	285,937	3	9
1806	59,027	....	16,224	84,949	183,832	1,561	....	316,059	1	7
1807	61,587	....	10,855	83,512	252,332	131	....	327,077	7	6
1808	64,682	....	12,145	89,544	283,498	149	....	325,565	19	7
1809	66,815	....	11,151	91,938	263,390	88	....	349,590	16	9
1810	68,872	....	9,176	69,252	252,872	120	....	318,831	19	9
1811	70,301	....	9,646	86,338	253,983	128	....	360,989	10	6
1812	60,248	....	7,010	91,881	260,664	48	....	364,686	11	11
	Flint.	Plate.								
1813	28,902	10,542	7,013	68,824	159,217	85	12	509,623	7	9
1814	32,503	9,139	8,609	60,170	139,746	110	6	425,235	2	11
1815	34,903	7,021	8,453	59,584	160,175	256	....	408,820	3	4
1816	25,959	3,647	6,140	55,502	155,595	167	....	325,963	14	0
1817	27,827	3,426	8,374	73,259	113,095	178	....	419,886	7	2
1818	33,948	7,647	8,319	83,986	200,011	223	....	548,309	10	7
1819	33,314	7,555	8,250	84,006	235,975	199	....	558,216	16	11
1820	29,437	8,822	7,782	70,253	167,208	202	....	469,609	6	11
1821	28,717	9,761	8,036	76,887	133,550	203	....	481,652	12	3
1822	28,892	9,661	8,353	83,799	149,754	294	....	506,987	6	0
1823	3,443	11,776	9,172	87,153	184,672	271	....	544,920	13	0
1824	32,568	13,564	9,300	104,489	229,134	277	....	645,172	9	6
1825	35,164	15,168	8,386	118,217	248,616	307	54	669,786	4	2
1826	45,262	12,528	8,118	98,380	248,103	341	588	622,216	7	10
1827	45,058	14,335	7,611	99,711	218,033	531	362	615,056	1	0
1828	51,063	17,071	6,956	90,603	224,864	750	1,092	602,632	6	4
1829	49,001	14,299	6,869	97,134	209,862	....	1,763	666,520	15	11
1830	48,063	13,057	4,845	84,178	165,549	104	1,436	542,595	0	0
1831	48,887	14,796	5,915	83,527	143,989	104	863	534,590	0	0
1832	49,552	11,990	5,304	90,253	151,705	25	707	555,303	0	0
1833	53,878	14,258	6,306	110,649	158,270	....	....	....		
1834	52,711	17,334	6,766	113,225	184,315	....	....	....		

It is principally to the complicated regulations of the excise, that this want of progress in our glass manufacture must be attributed. Those regulations may, indeed, be indispensable in order to protect the revenue and the fair dealer from frauds on the part of less scrupulous manufacturers; but this fact alone should be sufficient to convince the legislature of the impolicy of continuing to tax any branch of domestic industry as to which it occurs. The business of glass-making is one, the success of which depends in a peculiar degree upon the right application of scientific principles; and when it is considered that a departure from any, the minutest of the many arbitrary regulations prescribed by Act of Parliament for conducting this manufacture, would subject the party so acting to heavy penalties, our wonder is excited, not that so little improvement should have been made in the processes, but that the necessity should not have been acknowledged of affording the utmost encouragement for conducting experiments, without which it is in vain to hope for the attainment of excellence.

That the limitation in the quantity of glass used in this country is not wholly owing to the regulations whereby improvements are prevented, but is also occasioned, in part, by the excessive amount of the duty imposed, is made apparent by the facts which have accompanied various alterations in the rates of those duties. In 1794 an increase of 50 per cent. was made upon the then existing rates of duty, the effect of which upon the internal consumption of the kingdom was very striking. In the three years preceding the alteration, the average annual quantity retained for home use of all kinds of British glass, was 373,782 cwt.; while in the three years following that in which the duties were augmented, the average annual consumption was only 299,560 cwt.; showing a falling off of one-fifth between the two periods. In 1812 the rates of duty were doubled, and the annual consumption, which on the average of three years ending in 1811 amounted to 417,911 cwt., fell on the average of the three years following the alteration, to 264,931 cwt., showing a decrease of 36 per cent. upon the larger quantity. It places in even a stronger point of view the intimate connexion existing between the rate of duty and the progress of consumption, if we examine the effect that has followed upon a reduction of the duty. In 1819, in consequence of the progressive falling-off in the manufacture of plate-glass, and consequently in the produce of the duty during the six years in which the high rate had been levied, the duty on that description of glass was lowered from 4*l.* 18*s.* per cwt. to 3*l.* per cwt. The quantity made annually on the average of three years preceding 1819 was 4905 cwt., yielding 24,035*l.* to the revenue; whereas in the three years following that in which the reduction was made, the average quantity amounted to 9415 cwt., yielding to the revenue 28,244*l.* Since that time the average annual consumption has reached 14,000 cwts., producing upwards of 40,000*l.* annually to the Exchequer.

The pernicious effect of the glass duties must be apparent from the contrast exhibited by this manufacture to others, which are not subjected to similar disadvantages; and it cannot be necessary to do more than point to this contrast, as an argument in favour of abandoning the impost at the earliest moment possible.

There are, however, other reasons, distinct from the direct operations that have been pointed out, which render the system under which the glass-duties are levied peculiarly pernicious. The free progress of invention and improvement is by this means prevented, not only in the manufacture of glass, but also in many other arts and sciences to which glass is subsidiary. A manufacturer who by his skilful combinations had succeeded a few years since in making great improvements in the quality of bottle glass, was stopped in his operations by the Excise officers, on the plea that the articles which he produced were so good in quality, as not to be readily distinguished from flint glass, to which description a higher rate of duty is attached; the danger to the revenue being, that articles made of the less costly and less highly-taxed ingredients would be used instead of flint-glass. In every other country but this, manufacturers are at liberty to make any article of glass out of that particular material or composition which will best answer their purpose; and consequently many articles, the making of which it is contrary to the Excise regulations to permit in our glass-houses, must be imported from the Continent, notwithstanding the heavy rate of duty to which they are subjected at our Custom-houses. Among these may be mentioned glass for optical instruments, which is now almost wholly imported, because the regulations enforced by the Excise-office prevent the carrying forward of processes necessary for imparting to it that property upon which its excellence must altogether depend.

There is yet another reason why the duty upon home-made glass should be wholly abolished. The ingredients of which glass is composed are exceedingly cheap, and the art is at the same time so simple, and calls for the use of so few accessaries, that it can be successfully followed by almost any person of ordinary aptitude for manual operations, working with simple and uncostly implements. The facility with which glass can be made upon a small scale is greater now than formerly, and is continually increasing through the advance of chemical knowledge. In former times the preparation of alkalis used for the manufacture required premises of considerable dimensions, but the alkali now abundantly obtained from common salt is admirably qualified by its purity for the purpose, and it is well known that flint-glass is fraudulently made in great abundance in small attics and cellars, to the injury alike of the revenue and of the fair-dealing manufacturer. While the temptation is suffered to remain it will be altogether impossible to put a stop to this illicit manufacture, and it is to be feared that nothing short of the total repeal of the duty will be effectual to that end. The reduction that has been made of two-thirds of the rate of duty charged from 1825 to 1835 will still leave a sufficient temptation for the continuance of the fraudulent manufacture, and especially if the present system should be continued of allowing a drawback upon the exportation of glass equal to the full amount of the duty.

CHAPTER V.

MANUFACTURES.

MACHINERY.

CONTENTS.

IMPORTANCE of perfect tools and implements—Recent progress
manufacturing skill in their production—Babbage's calculati
machine—Foreign mechanical inventions perfected and adopt
in England—Policy of allowing the exportation of machinery-
Impossibility of confining the knowledge of improved machin
to our own country—Impolicy of the attempt—Laws restraini
artisans from going abroad—Their repeal—Footing upon whi
the limited exportation of machinery is now permitted—Progre
of the prohibitive system—Value of machinery exported.

IN no branch of manufacturing skill has more importa
and rapid progress been made of late years in this cou
try, than in the production of manufacturing implemen
and machinery. The extent to which this progress h
been carried, is such as to make it difficult to point o
any leading mechanical process, the details of whic
have not been, by this means, simplified, and the artic
produced brought nearer to perfection.

The great importance of this fact to a manufacturi
people scarcely needs to be insisted on. Without sup
rior tools and implements, how many valuable inve
tions now used, and which minister extensively to t
advantage and comfort of society, must have remaine
unapplied, if they had even at all suggested themselv
to the minds of the ingenious men by whom they ha
been conceived? How many elaborate pieces of m

chanism, without which those inventions could not be carried into practical operation, must have remained unconstructed for want of the equally elaborate tools necessary for their production, and for those nice adjustments upon which the success of the inventions depends!

The calculating machine of Mr. Babbage, the conception and perfecting of which afford proofs of genius and perseverance—rare in their degree, and still more rare in their combination—that would cast lustre upon any age or country, could not have been executed by means of the imperfect tools which even a very few years ago were in the hands of our most able machinicians. To the efforts made for the completion of this machine, the world is indebted for the possession of some of the most beautiful tools hitherto invented; and if no other benefit should result from this triumph of human thought, the time, and money, and talent bestowed upon the work will have been amply productive to the country, although, as is too frequently seen, the recompense of the inventor may be limited to a barren, and in its highest degree, even a posthumous fame.

Some part of our cotton-spinning machinery is of foreign invention; but the state of the mechanical arts not being sufficiently advanced for that purpose in their own countries, the inventors have been obliged to resort to English workshops for the means of perfecting their conceptions, and our factories offering at the same time the largest and most profitable field for the employment of these machines, our cotton manufacture has thus fairly profited from ingenuity which it has mainly contributed to foster. One of the most successful spinning frames now used in the factories of Lancashire, is the invention of a citizen of the United States of America, and has been thus made available for the more profitable conversion of a material, our largest supply of which is derived from that country.

The necessity for the employment of a high degree of skill in the adjustment of machinery for manufacturing purposes, has been illustrated by Dr. Ure in his recent work, " The Philosophy of Manufactures," by the following anecdote:—

" A manufacturer of Stockport being, not long ago, about to mount 200 power-looms in his mill, fancied he might save a pound sterling in the price of each, by having them made by a neighbour machine-maker, instead of obtaining them from Messrs. Sharp and Roberts, in Manchester, the principal constructors of power-looms. In order to give his fabricator every chance of success, the economist surreptitiously procured iron patterns cast from one of the looms of that Company, which, in its perfect state, costs no more than 9*l*. 15*s*. His 200 looms were accordingly constructed at Stockport, supposed to be fac-similes of those regularly made in Manchester, and they were set to work. Hardly a day passed, however, without one part or another breaking down,—insomuch that the crank or tappet-wheels had to be replaced three times, in almost every loom, in the course of twelve months. The fabric of the cloth was also indifferent. The proprietor, perplexed beyond measure, inquired of a neighbour who worked similar power-looms made by the Manchester machinicians, whether his wheels likewise went to pieces every other day, and learned to his mortification, that not one of them had broken in the course of working, but that the four or five spare ones, originally sent from Manchester along with his 236 power-looms, were unused and quite at his service. The old proverb of ' Penny wise and pound foolish,' never had a better illustration. His weaving factory had been most irregular and unproductive, while that of his neighbour had been uniformly prosperous."

The circumstances that have just been mentioned seem naturally to lead to a consideration of the policy of allowing the exportation of machinery from this country. It may be conceded that, in cases where an individual or a nation is in the possession of superior manufacturing processes whereby greater profits can be realized, it is as proper as it is natural to use every fair means for keeping those advantages out of the hands of foreign competitors. It is clear that these competitors can have no just reason for complaining, if we prefer our own profit to theirs. Neither would the inventors of the machinery have much cause for complaint, if the legislature should pass laws under which the manufacturers of this country would be secured in the monopoly of home inventions. Machine-makers have, so far, a contrary interest to the manufacturers,—that they are benefited by the extension of the use of their machines, while the advantage of the manufacturers consists in confining that use to themselves. To prohibit the exportation of his wares may therefore, at first sight, appear to be as great a hardship upon the machinist as it would be upon the weaver of cotton, if his productions were confined to the home market; but the cases are not in all respects parallel. By the restriction last supposed, the extension of the weaver's trade would be in a great measure limited to the slow natural increase of the people in the country of production; whereas the confining to that country of a machine by means of which better or cheaper goods can be made, will be followed by nearly the same effect as if the exportation of the improved machines were allowed, since the greater quantity of goods produced by their means, and for which, in consequence of their superiority or cheapness, a foreign demand would be kept up, must cause a greater number of the machines to be used at home, and it can be of no moment to the maker of those machines, whether his customers reside in the United Kingdom, or in France or Germany.

The state of things which has been here supposed cannot, however, have any existence in reality. It has never been found practicable to adopt regulations whereby the exportation of machinery can be wholly prevented. Where the invention is the object of a patent, an accurate and complete drawing and description can be procured by any one without trouble; and by the transmission of these, any engineer of ordinary capacity can in most cases construct a machine which will at least answer as a very tolerable substitute for that made under the inspection of the inventor. In the more complicated inventions, it mostly happens that the only part of the machine which is difficult of execution, is of small dimensions, and it is consequently easy to convey it illicitly out of the kingdom. Under these circumstances, it appears to be the most prudent course to legalize the trade, and thereby to secure for a part of the community a profitable source of employment. Nor would the manufacturers in this kingdom have any right to complain of the facilities thus given to their foreign rivals. The inventions which they would seek to retain for their own advantage have cost them neither labour nor expense. In fact, they can in no case have any plea for such a restriction, except that of the general advantage of the community, and the cases can be but very few in which that plea can be successfully urged. The interest of the bulk of the people must, on the contrary, always be best promoted by that policy which gives the utmost freedom to industry, and which tends to lower the prices of articles of consumption. Laws which prohibit the communication of facilities and improvements are liable to be imitated by other nations, either in a spirit of retaliation, or possibly from a belief in their wisdom, and both these reasons may be expected to operate most freely when the example has been set by a successful and powerful nation. Let us imagine that the American Congress, impressed with the wisdom of our old system of restrictions, or stung with a feeling of jealousy of our manufacturing superiority, had passed a law forbidding the communication to foreigners of the inventions of American citizens, so that the machines already spoken of as being derived from that country must have been brought into operation there and there only. It is far from being certain that while by the adoption of this course, England would have sustained a considerable injury, the American people would have derived any substantial benefit. In the fair and legitimate course of dealing between two people, it is so far from being true that what one of them gains the other must necessarily lose, that on the contrary, few things are more certain than that both may be, and almost universally will be, gainers by their transactions. But neither does it follow, that in unprofitable dealings what one loses must be gain to the other; both, on the contrary, may lose, and in the long run, this is almost sure to be the result. In the case supposed, America would lose an excellent customer for a large amount of her raw produce, and her citizens would consequently be deprived of many articles of English manufacture, which they cannot procure so good nor at so cheap a rate elsewhere. The capital required for carrying on the cotton manufacture upon a large scale would be withdrawn from other pursuits in which it is profitably embarked, and while a few might possibly be gainers, the many would be subjected to certain loss.

The laws prohibiting the exportation of machinery from this country have been very considerably relaxed within the last ten years. Previous to 1825, the jealousy of our legislature in regard to the progress of foreign manufactures was extended so far as to interfere with the natural right even of working artisans to transfer their industry to countries where it could be most profitably exerted. Any man who had acquired a practical knowledge of manufacturing processes was thereby rendered a prisoner in his own country; and not only might the arm of the law be interposed to prevent his quitting his native shores, but heavy penalties were imposed upon all persons who should abet the expatriation of one of our artisans. This disgraceful law has happily been expunged from our Statute-book. Its futility and impolicy were well described in the following

"Resolutions of the Committee appointed to inquire into the state of the Law of the United Kingdom, and its consequences, respecting Artisans leaving the Kingdom and residing Abroad, &c. Reported to the House of Commons, 21st May, 1824.

"1. That it appears by the evidence before this Committee, that notwithstanding the laws enacted to prevent the seduction of artisans to go abroad, many able and intelligent artisans have gone abroad to reside, and to exercise their respective arts in foreign countries; and that it is extremely difficult, if not impossible, in this country, by any mode of executing the present laws, or by any new law, to prevent artisans who may be so determined from going out of the country.

"2. That although the penalties which the laws inflict on artisans who disobey them, are not distinctly understood by the workmen, yet an unfavourable opinion is generally entertained by them of the partial and oppressive operation of these laws, as preventing them from taking their labour and art to the best market; whilst all other classes of the community are permitted to go abroad, and to take their capital with them whenever they think proper.

"3. That it appears also by evidence, that many British artisans residing abroad have been prevented from returning home, from an erroneous opinion that they have, by going abroad, violated the laws of their country and consequently incurred penalties under them.

"4. That in the opinion of this Committee, it is both unjust and impolitic to continue these laws; they therefore recommend their entire repeal, and that artisans may be at liberty to go abroad and to return home whenever they may be so disposed, in the same manner as other classes of the community now go and return."

Permission may now be had for the exportation of all the more common articles of machinery. In the Act by which this branch of trade is at present regulated, a long list is given of the various articles or classes of machinery the exportation of which is prohibited, but a discretionary power of relaxing the law is given to the Board of Trade, the branch of the government to which it seems most fitly to belong, and which decides upon each application, as it is made by the person seeking to export, according to the merits of each particular case. Under this system, the practice is uniform in regard to so many articles, that but little difficulty is experienced by the merchants, who in general know as to what machines or implements the indulgence will be extended, and from what it will be withheld, with nearly as much certainty as they would have known if each object had been scheduled in an Act of Parliament. The principal advantage of this discretionary power vested in the Board of Trade consists in its leaving to that Board the power of regulating the matter according to the changing interests of commerce.

The policy of restricting this, which might become an important branch of trade, was the subject of laborious investigation by Committees of the House of Commons which sat in 1824 and 1825. The concluding paragraph of the report made by the Committee in 1825 explains the reasons why it was thought expedient to leave the list of prohibitions unrepealed, and shows that the result of their inquiry left no doubt on the minds of the members of the Committee as to the inexpediency of the existing system. The paragraph here alluded to is as follows:—

"Although your Committee are impressed with the opinion that tools and machinery should be regulated on the same principles as other articles of manufacture, yet inasmuch as there exist objections in the mind of many of our manufacturers on this subject which deserve the attention of the legislature, and as it is possible that circumstances may exist which may render a prohibition to export certain tools and machines used in some particular manufactures expedient, your Committee beg to recommend that until an alteration can be made in the laws on this subject H. M. Privy Council should continue to exercise their discretion in permitting the exportation of all such tools and machinery now prohibited as may appear to them not likely to be prejudicial to the trade or manufactures of the United Kingdom."

England is, beyond all other countries, interested in the most perfect freedom being given to this as well as to every other branch of commerce. Placed beyond all comparison at the head of civilization as regards manufacturing skill, with capital far more ample than is possessed by any other people, with cheap and inexhaustible supplies of iron and fuel, and with institutions every way favourable to the utmost developement of the industry and ingenuity of her citizens, she must always be able at least to maintain her superiority of position where circumstances are in other respects equal; and be ready to turn to the utmost advantage every improvement which may reach her in common with her less powerful rivals.

It is besides more than probable that the system which has been adopted only with the view of protecting manufactures may, like most other protective enactments, be actually prejudicial to the interest which it was designed to benefit. The objects as to which prohibition is at present enforced are principally connected with the spinning and weaving of cotton, wool, and flax, branches of manufacture in which improvements are continually going forward. The importance of these improvements will be at once understood when it is stated that many among them are calculated to introduce an economy into the process amounting to from 2½ to 5 per cent. upon the cost of the fabric. This advantage it would of course be the object of every manufacturer to realize as speedily as possible; but except in the case of those who possess large capitals, none will care to throw away or to sell at the mere worth of the materials their old machines which have cost considerable sums, and they continue therefore to use them at a disadvantage; whereas, if the markets of the continent of Europe were open to them, in which they might find purchasers for the machines of which they are now in a manner compelled to continue the use, they would not hesitate at once to place themselves in the most advantageous position for carrying on their processes. Their discarded machinery, having the recommendation of cheapness, and being at the same time equal, if not superior, to that in general use abroad, would doubtless meet with ready buyers there.

The first Act passed by the English Parliament for preventing the exportation of machinery is dated in 1696. This Act prohibited the exportation of Lee's stocking-frame, a machine which was invented in 1600. The next in order among these restrictions was passed in 1750, and consequently after an interval of more than half a century. It is worthy of remark, that this Act was intended for the protection of the woollen and silk manufactures. The first of these branches of industry had previously flourished in England for more than 250 years without this protection; and as to the silk manufacture, the tools and utensils employed in which were prohibited from being exported in this Act, it was then only in its infancy among us, and it never took firm root as one of the branches of the national industry, until the mounds and fences raised up by the legislature for its protection had been all removed, and it was left to work its way exposed to competition from the then more accomplished artisans of France. Another interval of twenty-four years passed before any further Act of the same nature was passed. The next law, passed in 1774, prohibited the exportation of certain tools used in the cotton and linen manufacture. From that time the system of prohibition appears to have been in great favour with the legislature; the Acts which were passed forbidding the exportation of implements having followed each other with rapidity and descending some of them to objects of a very trifling nature, such as "presses and dies for horn buttons," "engines for covering whips," "tools for pinching of glass"—in fact, anything for which it appears to have been thought worth while on the part of any class of manufacturers to seek what they considered protection at the hands of the legislature through a monopoly of the implements required for the production of their goods.

Considering the perfection to which this branch of manufacture has been brought in this country, the value of machinery exported under this system of restriction is quite insignificant, so far at least as open and undisguised trade is concerned. The declared value of the shipments of machinery and mill-work in each year since 1822 has been—

	£.		£.
1822	116,220	1829	253,984
1823	157,146	1830	208,767
1824	129,644	1831	105,491
1825	212,420	1832	92,715
1826	228,505	1833	127,064
1827	201,822	1834	211,982
1828	262,115	1835	307,951

These sums include the shipments of machinery and mill-work to our own colonial possessions and to British India, which shipments have usually made up more than one-half of the value of machines exported.

In the extraordinary state of progression that has attended the various branches of our staple manufactures and of our mining operations, the system of prohibition as affecting the exportation of machinery has not produced so much effect as might have been expected upon the prosperity of our machinists. Their trade has partaken of the general extension, but certainly not to the degree that would have attended it under a different system. At the present moment, our engineers and mill-wrights may be said to have as much work upon their hands as the number of their workmen enables them to undertake, and skilled artisans such as they must employ, are not to be made without a long course of instruction.

We have seen from the report of Dr. Kay to the Poor Law Commissioners to how great an extent the manufacturers of Lancashire are giving employment to the makers of steam-engines and of spinning and weaving machinery. Having long resided in the immediate seat of the cotton-manufacture, and having given much of his attention to its progress, Dr. Kay is well qualified to inform us upon most subjects connected with it. Speaking of the present great efforts for its extension, he says, "One only doubt affects the limit of the period when this power will be in full operation, and this arises from the difficulty of supplying in that time (two years) even with the utmost exertion of every machinist in the trade, the machinery which this prodigious force is intended to move. The impossibility of accomplishing this will, in the opinion of some of the most experienced manufacturers, delay the period when this vast accession to the trade will be in full employ."

Persons unacquainted practically with the economy of our factories will be at a loss how to form a judgment from the mere statement of the amount of steam-power, as to the actual amount of the extension which it will occasion. The additional number of hands of whom it will occasion the employment has already been stated; from which it appears, that in only the districts comprehended within Dr. Kay's report, an addition of one-fifth is about to be made to the productive power of our cotton-manufacture. The additional fixed capital for which the new machinery will call, is thus stated by Dr. Kay:—"The outlay in buildings and machinery necessary to bring this horse-power into operation may be safely estimated at 500*l.* per horse-power, without taking into account the capital necessarily employed in trading transactions in connexion with the power; or, in other words, the erection of this power (7507 horses) presupposes an outlay of 3,753,500*l.* in buildings and machinery, and which outlay will occur in the cotton-districts of Lancashire within two years."

It would fill many large volumes to describe the numerous inventions which during the present century have imparted facility to our manufacturing processes and given perfection to the articles made. It will not be expected, therefore, that any enumeration of those inventions should be attempted in these pages. A description of all the improvements which have been made in steam-machinery alone, since the beginning of this century, would lead to investigations that could be profitably entered upon only in a treatise on mechanics. Some of the applications and effects of these improvements will necessarily be noticed in the third section of the work; and in the seventh section, which relates to our moral progress, it will be necessary to describe inventions connected with the typographical art, which have, during the last twenty years, given a new impulse to the progress of literature by reducing the labour and cost of the various processes so as to meet the demand for information which has arisen on the part of the great bulk of our countrymen.

CHAPTER VI.

MINING.

EARLY celebrity of the mines of England—Iron—Quantity made at various periods from 1740 to 1830—Tin—Produce of Cornish mines from 1750 to 1834—Increase since 1814—Imports and exports of foreign tin—British tin exported—Value of tin-plates exported—Copper—Produce of Cornish mines from 1771 to 1786, and 1796 to 1834—Total produce of English mines from 1820 to 1834—Value of tin and copper raised in Cornwall at different periods during the present century—Lead—Concealment practised by mine-owners as to the quantity of metal produced—Coal—Advantage of steam-engine in coal-mining—Davy's safety-lamp—Its effect in increasing the product of coal-mines—Shipments from Newcastle and Sunderland in each year from 1801 to 1835—Shipments from Stockton and Seaham—Prices of coal at Newcastle and Sunderland in each of those years—Prices in London from 1813 to 1835—Quantity of coals shipped from various parts of the kingdom from 1819 to 1835—Produce of inland collieries—Salt—Quantity annually produced—Reduction and repeal of Excise-duty on salt—Quantity annually consumed since 1801—Quantity exported from 1827 to 1834—Increased consumption since repeal of duty.

FROM the very earliest period to which record or even tradition can reach, this country has been celebrated for its mineral treasures. It is not intended to carry back our inquiries to the time when the Phœnicians traded to "the tin islands of Britain," described by Herodotus under the name of *Cassiterides*, or to discuss whether the rings and money of iron which Cæsar states to have been in the possession of the Britons, at the time of the Roman invasion, were really the produce of this country, or whether, as some persons have supposed, they were acquired in barter for tin. Our inquiry into the progress of mining as a source of national wealth must necessarily be limited to a period comparatively recent, and to statements of the results.

No statement has ever been made which pretends to perfect accuracy in regard to our production of iron.

The quantity made in England and Wales in 1740 was estimated at 17,350 tons, the produce of fifty-nine furnaces, in which only charcoal was used. Between that time and 1788 the plan of smelting iron-ore by means of coke was introduced, and in the latter year there were in England, Wales, and Scotland, eighty-five furnaces, producing annually 68,300 tons of iron, of which quantity 55,200 tons were smelted with coke. In 1796, in consequence of a tax projected by Mr. Pitt, upon coals at the pit, but which was not imposed, a careful inquiry was made as to the condition and extent of the iron-works that would have been affected by such a measure. On this occasion it appeared that there were—

				Tons of Iron.
In England and Wales	104	furnaces	producing	108,793
„ Scotland	17	„	„	16,086
Total..........	121	„	„	124,879

In 1802 it was further estimated that forty additional furnaces were in use in England and Wales, and seven in Scotland—the total annual production of iron amounting to 170,000 tons in the year. In 1806 a bill was introduced into the House of Commons by the Minister for imposing a duty of 2*l.* per ton upon all pig-iron made in the kingdom. This bill was afterwards withdrawn, but the attempt occasioned inquiries to be set on foot respecting the quantity of metal produced, and it was stated then to amount to 250,000 tons annually.

The following estimate, beginning with 1823, is said to have been made with great care by the manager of one of our largest iron smelting establishments, but the years to which it refers are all too recent and too near together to throw much light upon the question as to the present progress of production. The tables already given of the consumption of foreign iron, and the exportation of that of home manufacture, when coupled with the undoubted fact that this metal is used in the kingdom to a continually growing extent, and that it is now used for purposes to which it was never before applied, sufficiently attest the increasing productiveness of our iron works.

	1823.	1825.	1828.	1830.
South Wales.....	182,325	223,520	279,512	277,643
Staffordshire.....	133,590	171,735	219,492	212,604
Shropshire.......	57,923	86,320	81,224	73,418
Yorkshire	27,311	35,308	32,968	28,926
Scotland	24,500	29,200	37,700	37,500
Derbyshire.......	14,038	19,184	22,360	17,999
North Wales.....	—	13,100	25,168	—
Other places	2,379	3,000	4,160	5,327
Tons	442,066	581,367	702,584	653,417

Records of the produce of the tin and copper mines of Cornwall are kept with considerable regularity. The following table shows the produce of the Cornish tin mines, according to these records, in each year from 1750 to 1834.

	Tons.		Tons.		Tons.		Tons.
1750	2,876	1772	3,159	1793	3,202	1814	2,611
1751	2,273	1773	2,852	1794	3,351	1815	2,941
1752	2,550	1774	2,458	1795	3,440	1816	3,348
1753	2,516	1775	2,619	1796	3,061	1817	4,120
1754	2,714	1776	2,652	1797	3,240	1818	3,745
1755	2,757	1777	2,770	1798	2,820	1819	3,068
1756	2,774	1778	2,515	1799	2,862	1820	2,775
1757	2,752	1779	2,678	1800	2,522	1821	3,132
1758	2,720	1780	2,926	1801	2,328	1822	3,137
1759	2,637	1781	2,610	1802	2,627	1823	4,031
1760	2,717	1782	2,546	1803	2,914	1824	4,819
1761	2,395	1783	2,570	1804	2,993	1825	4,170
1762	2,584	1784	2,685	1805	2,742	1826	4,406
1763	2,736	1785	2,885	1806	2,855	1827	5,316
1764	2,618	1786	3,399	1807	2,426	1828	4,696
1765	2,757	1787	3,204	1808	2,330	1829	4,390
1766	3,055	1788	3,352	1809	2,508	1830	4,183
1767	2,850	1789	3,405	1810	2,006	1831	4,093
1768	2,667	1790	3,193	1811	2,384	1832	3,988
1769	2,898	1791	3,470	1812	2,373	1833	3,791
1770	2,977	1792	3,809	1813	2,324	1834	4,180
1771	2,823						

The trifling degree of fluctuation observable in the amount of metal produced throughout the whole period embraced by this table, with the exception of the last twenty years, is very remarkable. If the whole eighty-five years are divided into periods of five years, the average produce will be as follows:—

	Tons.		Tons.
1750 to 1754	2,585	1795 to 1799	3,084
1755 ,, 1759	2,728	1800 ,, 1804	2,676
1760 ,, 1764	2,610	1805 ,, 1809	2,572
1765 ,, 1769	2,845	1810 ,, 1814	2,339
1770 ,, 1774	2,853	1815 ,, 1819	3,444
1775 ,, 1779	2,647	1820 ,, 1824	3,578
1780 ,, 1784	2,667	1825 ,, 1829	4,595
1785 ,, 1789	3,249	1830 ,, 1834	4,047
1790 ,, 1794	3,405		

The increase observable in the produce of the last twenty years is the more remarkable, because, within that time, the produce of the tin mines of Banca has been greatly augmented. Until 1817 the mines of Cornwall afforded a considerable supply of this metal to China; the shipments amounting in some years to 800 tons; but since the restoration of the island of Banca to the Dutch, its mines have been rendered so productive as to supply the markets of China and India, and to furnish in addition a large quantity of tin for the continent of Europe.

The importations and re-exportations of foreign (Banca) tin during the last sixteen years have been—

	Imported.	Re-exported.
	Cwts.	Cwts.
1820	1,309	3,047
1821	1,106	652
1822	1,536	1,909
1823	6,461	5,502
1824	6,420	4,709
1825	4,213	4,709
1826	3,394	5,647
1827	2,217	2,938
1828	3,386	3,258
1829	2,674	2,581
1830	15,539	10,426
1831	8,099	12,226
1832	29,203	21,720
1833	35,124	39,850
1834	46,769	46,685
1835	19,704	23,795

Notwithstanding the competition thus experienced by the tin miners of Cornwall, the demand from foreign countries for English tin has continued to be considerable, and the exportation of tin plates has of late increased.

The quantities of British tin exported have been—

	Cwts.		Cwts.		Cwts.
1820	25,852	1826	43,645	1831	21,763
1821	29,229	1827	49,474	1832	31,838
1822	35,843	1828	41,427	1833	24,989
1823	26,364	1829	33,215	1834	9,351
1824	36,890	1830	30,425	1835	7,765
1825	34,237				

No record is kept at the Custom-house of the *quantity* of tin plates exported, but the progress of this branch of industry may be inferred from the following statement of the *value* of the annual exportations, as declared by the merchants at the time of shipment.

	£.		£.		£.
1815	275,136	1822	175,280	1829	212,526
1816	289,390	1823	209,143	1830	231,922
1817	239,062	1824	233,115	1831	215,446
1818	277,458	1825	185,251	1832	231,652
1819	167,843	1826	223,460	1833	268,742
1820	160,671	1827	281,958	1834	324,559
1821	161,299	1828	245,453		

The English tin miner is protected against the foreign producer in the enjoyment of the home market by an import duty of 50*s.* per cwt., which is about 80 per cent. upon the value of the foreign metal.

The produce of the copper-mines of Cornwall has increased in a much greater proportion than that of the tin-mines, as appears by the following statement of the annual produce of the former from 1771 to 1786, and from 1796 to 1834:—

Tons.	Tons.	Tons.	Tons.
1771..3,347	1785..4,434	1808..6,795	1822.. 9,331
1772..3,356	1786..4,787	1809..6,821	1823.. 7,928
1773..3,320	1796..4,950	1810..5,682	1824.. 7,824
1774..3,630	1797..5,210	1811..5,948	1825.. 8,226
1775..3,996	1798..5,600	1812..7,248	1826.. 9,026
1776..3,532	1799..4,923	1813..8,166	1827..10,311
1777..3,846	1800..5,187	1814..7,936	1828.. 9,921
1778..2,965	1801..5,267	1815..6,607	1829.. 9,656
1779..3,734	1802..5,228	1816..7,045	1830..10,748
1780..2,932	1803..5,616	1817..6,608	1831..12,043
1781..3,450	1804..5,374	1818..6,714	1832..11,947
1782..3,375	1805..6,234	1819..7,214	1833..11,191
1783..4,296	1806..6,863	1820..7,364	1834..11,224
1784..4,396	1807..6,716	1821..8,163	

The productive power of the Cornish copper mines has thus been increased more than threefold in the last sixty years. No statement can be given of the total quantity of copper raised in the United Kingdom before 1820; from that year the produce has been—

Tons	Tons,	Tons.
1820.... 8,127	1825....10,358	1830....13,232
1821....10,288	1826....11,093	1831....14,685
1822....11,018	1827....12,326	1832....14,450
1823.... 9,679	1828....12,188	1833....13,260
1824.... 9,705	1829....12,057	1834....14,042

The value of this metal now annually raised in the kingdom exceeds one million sterling, being more than double the value of the quantity annually produced in the beginning of the present century.

The money value of the tin and copper raised in the county of Cornwall at different periods of the present century, has been:—

Years.	—		Total.	Prices per Ton.			
				Tin.			Standard of Copper.
		£.		£.	s.	d.	£.
1801	Tin	254,722	731,035	101	0	0	117
	Copper	476,313					
1806	Tin	344,027	1,074,872	120	10	0	138
	Copper	730,845					
1811	Tin	337,336	901,078	141	10	0	126
	Copper	563,748					
1816	Tin	383,346	925,083	114	10	0	109
	Copper	541,737					
1821	Tin	242,730	871,562	77	10	0	111
	Copper	628,832					
1826	Tin	348,074	1,137,045	79	0	0	123
	Copper	788,971					
1831	Tin	300,845	1,106,935	73	10	0	100
	Copper	806,090					
1834	Tin	321,860	1,209,762	77	0	0	114
	Copper	887,902					

The increase thus shown in the value since the peace, and which apparently amounts to more than 30 per cent., is really much beyond that rate. In 1813, the last year of the war with France, the price of tin was 134*l*., and of copper 113*l*. per ton, estimated in a currency depreciated to the extent of 29 per cent. If the copper and tin produced in Cornwall in that year had been exchanged for gold at their market prices, they would have procured only 181,270 ounces of the more precious metal; whereas the produce of 1834, if similarly exchanged, now that the currency has been restored to its par value, would procure 310,693 ounces of gold, showing an increase in the real value over the produce of 1813, of 71 per cent.

There are no means by which to ascertain the progress made at any time in the productiveness of the lead-mines of this kingdom. To answer private purposes, the individuals by whom some of the most productive of those mines are worked, studiously conceal the amount of metal which they raise. Various conjectural estimates have been made as to that amount, but little dependence can be placed upon their accuracy; and even if we could determine which of those estimates is nearest to the truth, this would afford no help towards forming a comparison between different periods. Neither is any light thrown upon the subject by our Custom-house records, since the extent of our exports of lead is, in a great degree, governed by the comparative productiveness of the mines of other countries, and particularly by those of Adra in Spain. The extent to which these are wrought appears to fluctuate considerably from one year to another.

The value of the mineral products of England would be greatly inferior to what it actually is, were it not for the abundant supply of good coal found in various districts of the kingdom. It cannot here be necessary to point out the many advantages which we derive from the possession of our coal-mines, the sources of greater riches than ever issued from the mines of Peru, or from the diamond grounds at the base of the Neela Mulla mountains. But for our command of fuel, the inventions of Watt and Arkwright would have been of small account, our iron-mines must long since have ceased to be worked, and nearly every important branch of manufacture which we now possess must have been rendered impracticable, or at best have been conducted upon a comparatively insignificant scale.

If, on the one hand, our great mechanical inventions owe so much to the abundance and consequent cheapness of our fuel, it is no less true that some of these inventions have, on the other hand, materially assisted of late years in bringing about that abundance. But for the invention of the steam-engine, a large proportion of the coal-mines now profitably worked could not have been opened, or must have been abandoned. It is well-known that, by the consumption of one bushel of coals in the furnace of a steam-boiler, a power is produced which in a few minutes will raise 20,000 gallons of water from a depth of 350 feet; an effect which could not be produced in a shorter time than a whole day, through the continuous labour of twenty men working with the common pump. By thus expending a few pence, an amount of human labour is set free to employ which would have cost fifty shillings; and yet this circumstance, so far from having diminished the demand for human labour even in the actual trade where the economy is produced, has certainly caused a much greater number of persons to be employed in coal-mining, than could otherwise have been so set to work.

Another advantage which coal-miners more especially have received from the hand of science is derived from the safety-lamp of Davy—a discovery which, if estimated by the amount of the actual good it has done, must be considered one of the greatest made in our age and country. Many productive mines are now wrought, and old collieries have been re-opened, which must have lain useless but for the invention of the Davy Lamp.

The science of mining in all its branches has, besides, made great advances within the present century. It was stated by the Rev. Adam Sedgwick, Woodwardian Professor of Geology in the University of Cambridge, in his examination in 1830 before a Committee of the House of Commons, that "a great deal of coal appears formerly to have been left under ground, in consequence of a want

of general plans or maps of the underground workin
a number of excavations have taken place independe
of each other, and the consequence is, there is a g
number of piers or large barriers between the old c
works, some of which it may be almost impossibl
remove." It was likewise the custom in working
mines, to leave large pillars of coal in order to sup
the roof; so that at the depth of 100 fathoms little n
than 40 per cent. of the coal was abstracted, and
remainder was given up as lost. In 1795 an atte
was made to substitute wooden pillars for a part of
coal previously left, and this, to a certain extent,
successful. At that time it was not attempted to rem
more than one-half of each alternate pillar of coal,
leaving between 40 and 50 per cent. of the coal in
mine. In 1810 an improvement in this system
introduced, by means of which every intermediate pi
was wholly removed, and a part of the adjoining pil
was likewise taken away; and by working thus, ab
80 or 90 parts out of every 100 were brought to mar
It was in the year 1815 that Sir Humphry Davy brou
the safety-lamp to use, and in the opinion of Mr. Bud
an intelligent and experienced coal-engineer, who
examined in 1830 before the Committees of Lords
Commons concerning the coal-trade, "this opera
as a complete renovation to many of the collieries wh
were then in a state of exhaustion. By its means, co
bined with the system of artificial propping, every p
ticle of coal can now be got out of the mine before i
abandoned."

The following tables, exhibiting the amount of sh
ments of coals made from the Tyne and the Wear
each year, from 1801 to 1834, may throw some li
upon this subject. It appears from these tables, that

average annual shipments from these two ports, in the five years ending with 1818, exceeded the average shipments of the preceding five years, by upwards of 300,000 tons, or 12½ per cent. If those preceding five years are compared with the five years ending with 1835, it will be found that the increased shipments in the latter period amount to 900,000 tons per annum; being more than 35 per cent. beyond the shipments at the earlier period, and exceeding the shipments during the first five years of the century by more than 50 per cent.

Table of the Quantity of Coals shipped from the Port of Newcastle in each Year from 1801 to 1835, distinguishing the Shipments Coastwise from those made to Foreign Parts.

Years.	Coastwise.	To Foreign Parts.	Total.
	Tons.	Tons.	Tons.
1801	1,198,308	133,562	1,331,870
1802	1,310,393	116,600	1,426,993
1803	1,338,613	117,458	1,456,071
1804	1,536,812	139,360	1,676,172
1805	1,464,991	131,366	1,596,357
1806	1,558,934	123,710	1,682,644
1807	1,404,367	76,674	1,481,041
1808	1,640,681	42,402	1,683,083
1809	1,428,610	36,143	1,464,753
1810	1,643,977	45,733	1,689,710
1811	1,678,401	47,528	1,725,929
1812	1,671,177	66,210	1,737,387
1813	1,548,087	39,116	1,587,203
1814	1,720,250	84,763	1,805,013
1815	1,723,054	112,450	1,835,504
1816	1,797,100	116,025	1,913,125
1817	1,650,889	137,262	1,788,151
1818	1,780,458	126,521	1,906,979
1819	1,695,965	105,297	1,801,262
1820	2,004,759	118,788	2,123,557
1821	1,834,650	127,457	1,962,107
1822	1,736,171	143,365	1,879,536
1823	1,958,109	121,391	2,079,500
1824	1,822,148	129,966	1,952,114
1825	1,820,626	136,266	1,956,892
1826	2,099,867	165,943	2,265,810
1827	1,811,924	173,355	1,985,279
1828	1,921,467	157,211	2,078,678
1829	1,956,829	163,380	2,120,209
1830	2,167,355	197,308	2,364,663
1831	2,097,617	161,247	2,258,864
1832	1,809,412	197,337	2,006,749
1833	1,926,205	233,709	2,159,914
1834	2,022,226	230,342	2,252,568
1835	2,266,531	313,107	2,579,638

Table of the Quantity of Coals shipped from the Port of Sunderland in each Year, from 1801 to 1835, distinguishing the Shipments Coastwise from those made to Foreign Parts:—

Years.	Coastwise.	To Foreign Parts.	Total.
	Tons.	Tons.	Tons.
1801	612,197	12,607	624,804
1802	808,449	82,694	891,143
1803	792,207	26,942	819,149
1804	793,812	11,029	804,841
1805	830,263	15,782	846,045
1806	811,618	7,424	819,042
1807	775,987	11,331	787,318
1808	923,850	5,455	929,305
1809	858,944	2,579	861,523
1810	982,388	5,086	987,474
1811	876,996	4,583	881,579
1812	897,964	8,343	906,307
1813	919,947	4,715	924,662
1814	989,090	29,228	1,018,318
1815	895,443	45,021	940,464
1816	1,027,371	42,215	1,069,586
1817	964,250	30,811	995,061
1818	1,038,245	41,973	1,080,218
1819	1,002,893	40,995	1,043,885
1820	1,102,327	38,227	1,140,554
1821	1,050,443	38,624	1,089,067
1822	1,051,840	43,509	1,095,349
1823	1,317,385	41,198	1,358,583
1824	1,301,645	42,082	1,343,727
1825	1,382,759	41,157	1,423,916
1826	1,455,988	38,419	1,494,407
1827	1,387,109	39,625	1,426,734
1828	1,350,354	60,743	1,411,097
1829	. . . .	. . . .	1,497,059
1830	. . . .	. . . .	1,387,426
1831	. . . .	. . . .	1,256,396
1832	. . . .	. . . .	1,201,152
1833	1,176,176	176,487	1,352,663
1834	952,087	149,956	1,102,043
1835	929,187	154,538	1,083,725

Within the last few years, a considerable coal business has been carried on from the port of Stockton, on the river Tees, and from Seaham, an artificial harbour, on the coast between the Tees and the Wear, to which a rail-road has been carried from one of the largest collieries in the northern district. The first shipment of coals from Stockton occurred in 1822, when the total quantity was only 1224 tons. This shipment appears to have arisen from some accidental circumstance; for no further shipments from that port occurred until 1826, when they amounted to 10,754 tons. The shipments in 1827 and 1828 were 32,182 and 66,051 tons respectively. No return was made during the next four years, in which time Seaham harbour was completed; but in 1833, the shipments from that place and Stockton, with which port it is connected for revenue purposes, amounted to 582,500 tons; in 1834 the quantity was further increased to 633,472 tons; and in 1835, to 704,781 tons. If this last-mentioned quantity is added to the shipments from Newcastle and Sunderland, which are the shipping ports whence these exports would previously have been made, it will be found that the shipments in 1835 exceeded those of 1801 by 2,411,450 tons; being 123 per cent. increase upon the shipments of 1801, and 85 per cent. increase upon those of 1814.

The progressive increase in the shipments from the Newcastle coal district, as shown by the foregoing table, has not been the result of any stimulus given by advancing prices. The rates at which coals have been sold in London do not afford any correct view of the prices paid to the coal-owners, because the freight and charges incurred in conveying them to the metropolis are constantly varying; and this will be found especially the case, if a comparison is made between years of war and peace. The anxiety that has long been shown by the Legislature to shield the consumers of coals in London from unfair practices on the part of the dealers, has led to the compulsory registration of prices. So long ago as the reign of Queen Anne, an Act was passed, requiring the shipper of coals to give a certificate with each cargo, setting forth the quantity, quality, and price paid for the same; and this certificate, on the arrival of the ship in London, was delivered to an officer at the Mansion House, for the inspection of the public. The prices in these certificates are stated, up to 1825, for Newcastle chaldrons of 53 cwts. each; from that time until 1832, the Imperial chaldron, equal to 25½ cwts., was the standard; and since 1832, the rates have been given per ton weight. To simplify the matter, the prices here given for the whole period, from 1801 to 1835, are reduced to those paid per ton. The best quality of coals is given in all cases; and the period chosen for the quotation is the beginning of June in each year, at which time there is less probability of accidental fluctuations than during the winter season.

Statement of Prices paid at Newcastle and Sunderland for Coals of the first Quality shipped for London, at the beginning of June in each Year, from 1801 to 1835:—

Years.	Per Ton.		Years.	Per Ton.		Years.	Per Ton.	
	s.	d.		s.	d.		s.	d.
1801	10	4	1813	13	0	1825	12	8
1802	10	4	1814	13	0	1826	13	6
1803	10	4	1815	13	0	1827	13	6
1804	11	6	1816	13	0	1828	13	6
1805	11	6	1817	13	0	1829	12	9
1806	11	6	1818	13	0	1830	12	4
1807	11	6	1819	13	0	1831	12	4
1808	11	6	1820	13	0	1832	12	3
1809	13	0	1821	12	8	1833	10	6
1810	13	0	1822	11	11	1834	10	9
1811	13	0	1823	12	8	1835	11	0
1812	13	0	1824	13	0			

The following statement of prices paid in London, in July of each year, from 1813 to 1835, will show how materially the inhabitants of this city have benefited through the reduction, and subsequently the repeal, of the duty charged upon sea-borne coals. It also exhibits the rate of freight and charges between Newcastle and the river Thames.

Statement of the Prices of the best Newcastle Coals at the Coal Exchange, London, in the Month of July in every Year, from 1813 to 1835:—

Duty, *7s.* *6d.* per Ton.			Duty, *4s.* per Ton.			Duty repealed.		
Years.	Per Ton.		Years.	Per Ton.		Years.	Per Ton.	
	s.	*d.*		*s.*	*d.*		*s.*	*d.*
1813	42	0	1824	33	4	1831	22	9
1814	44	8	1825	23	6	1832	19	6
1815	39	0	1826	25	3	1833	15	9
1816	34	8	1827	28	3	1834	19	0
1817	31	9	1828	27	6	1835	20	3
1818	32	9	1829	23	6			
1819	30	7	1830	27	6			
1820	30	7						
1821	32	6						
1822	30	4						
1823	33	4						

The table next offered shows that the quantity of sea-borne coals, the produce of our mines, has been increased since 1819, from 4,365,040 to 6,854,053 tons, or at the rate of 57 per cent.

Statement of the Quantity of Coals shipped Coastwise from Ports of Great Britain to other Ports of Great Britain, to Ireland, to the British Colonies, and to Foreign Countries, in each year from 1819 to 1834.

Years.	To ports in Great Britain.	To Ireland.	To British Colonies.	To Foreign Countries.	To all parts.
	Tons.	Tons	Tons.	Tons.	Tons.
1819	3,459,508	669,660	71,497	164,375	4,365,040
1820	3,947,908	606,400	90,447	158,672	4,803,427
1821	3,731,908	644,787	90,423	170,941	4,638,059
1822	3,810,239	694,024	111,822	172,754	4,788,839
1823	4,372,839	693,413	89,713	163,662	5,319,627
1824	4,308,571	691,429	99,575	179,617	5,279,192
1825	4,384,433	695,832	114,264	197,234	5,391,763
1826	4,730,307	779,584	123,437	223,219	5,856,547
1827	4,440,318	650,728	123,109	244,222	5,458,377
1828	4,507,935	740,071	128,092	227,709	5,603,807
1829	5,014,132	840,246	128,893	240,854	6,224,125
1830	. . .	. . .	145,204	357,288	*
1831	. . .	. . .	152,278	356,419	
1832	. . .	. . .	173,508	414,938	
1833	5,859,179	†	192,082	442,366	6,493,627
1834	5,822,561		189,838	425,417	6,437,816
1835	6,117,993		189,722	546,338	6,854,053

* In consequence of the repeal of the coasting duty on coals, the Custom-house has ceased to keep any record of the shipments, and no return of the quantities in these years has been called for by Parliament.

† Including shipments to Ireland.

The quantity of coals, of the transmission of which any record can be kept at our custom-houses, exhibits, however, but very imperfectly the progress of the supply of this kind of fuel. The seat of various manufactures having in great part been determined by the presence in certain districts of cheap fuel, and the growth of population having by that means been greatest in or near to some of our principal coal-fields, the quantity of fuel brought into consumption without the necessity of its being shipped, and thereby coming under the cognizance of the Custom-house, is constantly increasing in a much greater ratio than that of sea-borne coal. Lancashire, the West Riding of Yorkshire, Nottingham, [illegible] of [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] the coal owners of Northumberland [illegible] that they [illegible] subjected to great [illegible] competition, and a depreciation from the [illegible] throughout the kingdom [illegible] coals passing by inland navigation [illegible] different parts of the country. I [illegible] of this depreciation [illegible] that the quantity thus distributed amounted [illegible] chaldrons, or 10,808,046 t[illegible] annually:

[illegible]	[illegible]	chaldrons, or	2,5[illegible]3,026
Derbyshire	[illegible]	,,	[illegible]42,[illegible]15
Nottinghamshire	166,666	,,	441,665
Leicestershire	66,666	,,	176,665
Warwickshire	162,962	,,	431,649
Staffordshire	300,000	,,	795,000

Quantity that passes towards the Eastern Sea......5,404,023
An equal quantity believed to pass towards the West and South 5,404,023

Quantity carried by canals and railways 10,808,046

The quantities here given can have been nothing more than an approximation to the truth. If at all correct at the time they were stated, we may be certain that the tonnage must be far greater, now that the wants of the country are so multiplied through the increase of population, and the still greater increase of manufactures, and that the means of distribution, also, are multiplied.

The great consumption of inland coal, as here assumed, will not appear excessive to those who have inquired into the subject. For smelting one ton of iron it may be assumed that four tons of coals are required *; and if we further assume that the quantity of iron produced in the country amounts to 750,000 tons in the year —a quantity believed to be below the truth—it will follow that 3,000,000 tons of coals are consumed in the single process of producing pig or cast iron. To convert this comparatively raw material into bar iron, and to manufacture the latter into the numerous articles of hardware which are made, must add so materially to the consumption of coals, that we should probably be within the truth in estimating the quantity consumed throughout the kingdom in all the various branches of the iron trade, at more than 5,000,000 tons per annum. The town of Sheffield alone, as already shown, requires for manufacturing purposes about 350,000 tons.

Among the mineral productions of England, salt has long been an article of considerable importance. The mines from which English salt is produced in the fossil

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* Mr. David Mushet has stated that " a ton of iron is made at some furnaces under three tons of coals, and at others eight or nine tons are required for the same purpose." Owing to the recent employment in Scotland of heated air for smelting iron ore, it is said that one ton of iron is produced by the heat given out by two tons eight cwt. of coals.

or solid form, are situated in Cheshire, near the town of Northwich. Brine springs are also found in the same neighbourhood, as well as in other counties, and chiefly in Staffordshire and Worcestershire. Nearly the whole of the fossil or rock salt that is raised is exported, some to Ireland, but the principal part to the north of Europe. A small quantity is used to strengthen the brine yielded by salt-springs, from which the salt used for domestic purposes, and also a large part of what is exported, is produced by evaporation.

The chief part of the Cheshire salt, both fossil and manufactured, is sent down the river Weaver to Liverpool, for distribution and exportation; only a small proportion being conveyed to other places by canal and land-carriage. The white salt made from the Staffordshire springs is chiefly exported from Hull, while that from Worcestershire finds an outlet at Gloucester. The following table exhibits the quantities of white and rock-salt sent down the river Weaver in each year from 1803 to 1835. If to the quantity here stated 100,000 tons of white salt are added annually for the produce of springs in other counties, and for that part of the Cheshire salt which is not sent to Liverpool, it is probable that the total produce of this mineral in England will be very nearly ascertained.

Years.	Rock Salt.	White Salt.	Total.
	Tons.	Tons.	Tons.
1803 . .	57,699	122,537	180,236
1804 . .	57,087	126,775	183,862
1805 . .	60,830	180,498	241,328
1806 . .	52,620	157,124	209,744
1807 . .	54,187	180,165	234,352
1808 . .	47,916	123,693	171,609
1809 . .	63,520	192,590	256,110
1810 . .	50,564	205,800	256,364
1811 . .	49,277	120,487	169,764
1812 . .	54,140	159,364	213,504
1813 . .	47,230	149,074	196,304
1814 . .	101,075	233,249	334,324
1815 . .	88,741	236,373	325,114
1816 . .	74,286	121,728	196,014
1817 . .	59,446	148,709	208,155
1818 . .	93,582	214,931	308,513
1819 . .	85,935	179,939	265,874
1820 . .	82,956	188,808	271,764
1821 . .	91,867	147,822	239,689
1822 . .	110,785	151,431	262,216
1823 . .	125,658	170,401	296,059
1824 . .	121,459	162,365	283,824
1825 . .	89,551	252,876	342,427
1826 . .	51,522	232,026	283,528
1827 . .	45,829	271,535	317,364
1828 . .	66,883	289,225	356,108
1829 . .	82,830	321,462	404,292
1830 . .	97,077	336,245	433,322
1831 . .	90,742	301,679	392,421
1832 . .	94,400	345,896	440,296
1833 . .	95,706	383,669	479,375
1834 . .	82,179	376,220	458,399
1835 . .	61,505	298,543	360,048

Up to the year 1823, salt was subject to an Excise duty of fifteen shillings per bushel, which was reduced in that year to two shillings; and since the 5th of January, 1825, the duty has been wholly repealed. The following table shows the total quantity of salt made, and the proportion taken for consumption in each year from 1801 to 1817, the latest period to which the account was called for by Parliament previous to the repeal of the duty; subsequent to that event there are of course no means for obtaining such information. We may, however, make an approximation towards the truth for the eight years from 1827 to 1834 by means of the preceding table, and of the statements which will be found below of the quantities exported during those years, the difference between the quantities produced and exported representing the internal consumption of the country.

Years.	Bushels made.	Bushels taken for consumption.
1801	9,469,491	1,822,683
1802	9,582,713	1,863,402
1803	8,741,808	1,996,261
1804	8,933,324	2,065,776
1805	10,210,004	1,951,602
1806	10,891,085	1,910,453
1807	10,872,672	1,912,462
1808	8,903,162	1,907,273
1809	9,849,499	1,965,161
1810	11,929,728	1,999,486
1811	10,387,932	2,038,252
1812	9,468,689	2,047,392
1813	11,067,603	2,037,931
1814	12,182,497	2,045,892
1815	15,084,644	2,136,912
1816	11,559,950	2,003,243
1817	9,357,482	1,939,674

Bushels of Rock and White Salt exported in each yea
from 1827 to 1834.

1827 . .	7,475,025	1831 . .	9,932,214
1828 . .	8,993,124	1832 . .	10,561,861
1829 . .	10,574,951	1833 . .	11,670,434
1830 . .	10,499,778	1834 . .	11,093,674

Of the quantity exported in the last of these years, (1834.)

Russia took	1,206,910 bushels
Denmark . . .	795,060 ,,
Prussia	971,780 ,,
Holland . . .	514,340 ,,
Belgium	619,228 ,,
Sweden and Norway . .	252,735 ,,
Germany	304,602 ,,
British North American Colonies	1,970,236 ,,
United States of America .	3,792,586 ,,
Western Coast of Africa . .	216,480 ,,
New South Wales . .	113,986 ,,
Guernsey, Jersey, &c. . .	140,120 ,,

the remaining quantity (195,611 bushels) was sent in small shipments to the West Indies, ports in the Mediterranean, Brazil, &c.

Assuming the correctness of the estimate first given respecting the production of salt, and deducting from the quantities assigned to each of the years from 1827 to 1834, the quantities exported in those years, it will be found that the quantity retained for use within the kingdom has in each year been as follows:—

1827 . .	9,219,535 bushels	1831 . .	9,764,626 bushels
1828 . .	9,251,196 ,,	1832 . .	11,049,979 ,,
1829 . .	9,596,729 ,,	1833 . .	11,504,566 ,,
1830 . .	10,833,102 ,,	1834 . .	11,242,286 ,,

The average of these quantities is 10,307,752 bushels, while the average consumption of the eight years from 1801 to 1808, as given by the Excise table, was 1,928,739 bushels, showing thus an increase between those periods of more than 430 per cent.

During the continuance of the high duty, the proprietors of salt-works charged, in addition to the duty, more than double the price which they now demand, as an equivalent for the greater capital embarked and the increased risk attending the business.

Since the repeal of the duty, salt has been much more used than formerly by the poor in many parts of the country for salting provisions; and it has besides been applied to many purposes in the arts; as a substitute for kelp, barilla, and potash, in the manufacture of glass and soap, and also in the manufacture of bleaching salts; purposes to which it would not have been applied but for the great reduction in its price.

END OF SECTION TWO.

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